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UNITED STATES FOOD ADMINISTRATION

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INSTITUTIONAL FOOD CONSERVATION

Suggestions Adapted to State and Public Institutions

This publication is prepared by Mr. Pitcher of the committee appointed by the United States Food Administration for study of institutional menus, large quantity cooking, elimination of waste, and methods of conservation in public and private institutions. Studies were made in public institutions in New York and Boston and were financed by the New York State Federal Food Board.

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FOREWORD.

The aim of this pamphlet is to give some concrete suggestions for food conservation in institutions. The suggestions are more especially adapted to large state and private institutions, and less to small institutions and hospital service.

Under each topic only salient points are touched upon, and only such as have a direct bearing upon food production or conservation. Some of the suggestions are already in force in many institutions; to other institutions, however, they will be of service.

Carrying out these suggestions may in some instances require additional equipment, but if that will save food the expense is justified, since economy in food is the vital factor.

The most important suggestion offered in the pamphlet is the description of a food-waste system combined with basic quantity ration tables. It is the general custom in most institutions to attempt to ascertain the relative quantity of waste food by a daily or periodic inspection of the garbage cans. These cans contain the waste from the preparation of food as well as the waste food that comes from the kitchens and dining rooms. Foods are mixed in such confusion that it is practically impossible for any observer, however experienced, to tell with any degree of accuracy the relative amounts of different articles of food contained in the garbage. This basis of judgment is so defective that no adequate regulation of food can be based upon it. If the administrative officer of an institution would know with accuracy whether the food prepared for his patients is eaten or sent to the garbage, he must in some way see that the food as it comes from the tables is classified and that the waste of each kind is gathered separately and weighed; that is, all bread would be gathered into one receptacle, all potatoes into another, etc., and reports made upon the weight of each article. When this is done, the administrative officer may know with accuracy not only the total quantity of food left over and not eaten, but also the quantity of each item. This knowledge would enable him to order either more or less of any particular article served at succeeding meals. The waste system herein described is designed to supplant by accurate means the coarse judgment of garbage-can inspection. The system has been in successful operation in one institution in New York State for eight years, and in the institutions of some States and in Canada for several years, indicating that it is practicable and serviceable. Moreover, in all cases a surprising amount of food has been saved by its introduction.

The basic quantity ration table is simply a handy computed table for the determination of the amount of food to be distributed. Too often it has been the custom in institutions to determine the

amount of food necessary for a given number of inmates, and then to allow this computation and distribution to continue for an extended period, during which the census may have materially decreased. By the use of such tables computation is obviated, and the distribution can be accurately adjusted to the census or other varying conditions day by day. To operate the waste system successfully it is necessary also to use the ration tables.

A loyal cooperating staff is necessary for the success of any institution, particularly for the operation of the kitchen and dining room. If institutions have not changed their salary and wage scale to correspond to increased war cost or intensified commercial competition it would be highly advisable to make such adjustment as would produce satisfaction and contentment on the part of the staff. Unless wages and salaries can be paid to insure interest and loyalty, it will be difficult indeed to introduce reforms or to carry out ordinary food-conservation methods.

It is highly advisable that institutions ask their respective State food authorities and agricultural colleges to put them on the mailing list for all publications dealing with institutional supplies and policies. On request the United States Food Administration will send any new matter that may be of interest to institutions.

HENRY C. WRIGHT.

GENERAL STATEMENT.

UNIVERSAL SERVICE.

The United States Food Administration has relied in its work upon the cooperation of all of our people. Food conservation and the use of substitutes for war essentials should be a universal service. Considerable saving is possible, particularly where groups are fed, since individual efforts are so promptly multiplied and visualized. Early in the war a letter was received from an inmate of one of our public institutions which said: "Even a man with a shattered mind or body ought to help some in the war." They can all help, the hundreds of thousands that are collectively fed, if those who care for them study their problems and play their part. Without detriment to individual or public health those changes in diet that help to save wheat, meat, fat, and sugar, and that prevent waste can be put into use. The more we save over here, the more we serve "over there."

It is a privilege to many a man or woman who is doing institutional work to do it in such a way that he or she can feel the thrill and joy that go with a war service.

In offering these suggestions it is fully realized that each institution has its own local problems; moreover, the administrative problems of small institutions are somewhat different from those of large institutions. Nevertheless, the suggestions offered are, in the main, applicable to institutions in different parts of the country and of varying size.

The suggestions offered are in practice in many institutions of the United States and Canada. Their practicability, therefore, has been established.

It is hoped that special effort will be made by the management of institutions to proceed with at least a majority of the offered suggestions.

The saving of food not only leaves more food for our allies but at the same time releases transportation facilities that are much needed for the transfer of war materials.

If it be realized that during the progress of the war the conservation of food by institutions is of primary and vital importance, special effort should enable the management to inaugurate most of the suggestions.

FARM AND GARDEN.

The farm and garden are a very important department of an institution in normal times, but now that as much food as possible should be produced everywhere the garden products of an institution have an increased value. Every effort should be made to increase the productivity and acreage of the land under cultivation. To do this some of the usual activities, such as grading new lawns, beautifying the grounds, and part of the industrial work should be

curtailed so as to furnish the necessary help for the farm and garden when there are crops requiring additional labor to plant or gather. This is particularly true in the gathering of crops. It is a conservative estimate that in times past there may have been losses as high as one-third in certain crops, particularly in peas, beans, and berries, on account of inability to secure help to gather the harvest. During the planting, tilling, and harvesting season other activities of the institution should be so limited that there will be plenty of help available for these purposes.

Where an institution heretofore has been planting garden crops for horse cultivation the acreage may be increased through intensive gardening; that is, planting the crops close together and tilling them with hand cultivators and hoes. This will increase the yield per acre considerably. Some of the lawns can be planted to food crops and new land can be cleared and put under cultivation.

The dairy and the piggery of an institution are very valuable. The dairy furnishes both food supplies for the institution and fertilizer for the land. The piggery makes it possible to utilize the waste (garbage) from the tables, and the meat produced obviates the necessity of purchasing pork for the general dietary. Production of pork at an institution in most instances is the most profitable industry of the farm. The temptation should not be fallen into of producing unnecessary waste to feed more pigs.

THE UTILIZATION OF FARM AND GARDEN PRODUCTS.

The utilization of farm and garden products is as important as their production. Each institution should have such equipment that food products which are not necessary for use from day to day may be stored, dehydrated, or canned for future use. Each institution should have vegetable cellars capacious enough to store properly root crops and fruits which can be kept. Institutions should be equipped with apparatus so that fruits and vegetables in season may be dehydrated or canned in quantities. Cabbage, cucumbers, green tomatoes, and string beans may be successfully preserved through what is known as the fermentation process (salting). Where there is space available for tanks, this can be more readily done by following the method used at large salting stations; that is, by using tanks of large capacity. Tanks of 250 to 3,000 gallons are best for this purpose. For string beans, cucumbers, etc., it is well to have the tanks of such size that a whole tank can be filled at one time. Cabbage can be pickled (made into sauerkraut) in tanks of 3,000 gallons or more. The use of tanks saves space and expense, since only enough barrels are then needed in which to distribute the food to the kitchen.

There will be a great loss in farm and garden crops, whether purchased or produced at the institution, unless they are properly utilized day by day. This loss will be greatest at institutions where there are farms and gardens, and it should be emphasized that crops should not be unduly forced into the dietary of an institution, but only such quantities should be used as are necessary from day to day, all the remainder being stored, dehydrated, canned, or pickled for the future.

When fresh fruits or vegetables are received at the institution, whether home grown or purchased, there will be occasions when more are brought to the storehouse than are needed. These should be

utilized with the same care as those gathered for dehydration, canning, or pickling.

PURCHASE OF FOOD.

Supplies, so far as possible, should be purchased in season. It is very important that suitable specifications be used so that competitive bids can be secured for all the principal items of food. The specifications should be so drawn that the article is carefully and accurately described and should provide that if the contractor fails to make proper deliveries the institution may make purchases in the open market and recover the difference in cost from the contractor. This can be brought about by requiring him to furnish a bond to guarantee performance of contract.

Flour, meat, milk, butter, and eggs, when purchased to cover a considerable period and therefore in large quantities, may be contracted for and the contractor required to furnish a bond. Even where these and other items of food supplies, such as cereals, sirup, molasses, sugar, etc., are bought in small quantities in the open market, competitive bids should be secured. In the purchase of fruit and vegetables it is usually not practical to make contracts, as they can be acquired on competitive bids as needed, with the exception of such root crops as can be bought in quantity.

RECEIVING FOOD.

The inspection of goods after they have been purchased and received is the next step. All goods when received should be weighed, counted, or measured. The person inspecting them should have sufficient training and knowledge of supplies to know what he is receiving, and the specifications should be so complete that he will have clear grounds for acceptance or rejection.

STORING OF FOOD.

To buy to the best advantage, storage facilities must be at hand so that meat, flour, potatoes, and sugar may be purchased in car lots, if the institution is large enough. Cereals and other supplies, not practical to buy in car lots, should be purchased in sufficient quantities to secure the wholesale price.

Refrigerating rooms cooled by mechanical means are superior to those cooled by ice, as supplies can be kept much longer and in a better state of preservation.

There should be sufficient storage space in which to store properly all perishable food as soon as received. Storerooms should be large enough so that supplies may be properly separated and classified and proper stock slips and records kept of what is on hand.

In places where cereals are likely to become infested by worms or bugs it is advisable to have the storage place scrubbed frequently, disinfected, and whitewashed; and in the summer months it is well to store cereals in refrigerated rooms, if possible.

DISTRIBUTION OF FOODS TO KITCHENS AND DINING ROOMS.

Food supplies should be issued only on requisitions.

All issues should be made by weight, count, or measure. The deliveries should be made from the storehouse to the kitchens in such a

way that the supplies will not become contaminated or deteriorate while in transit. Each place of delivery should be provided with scales for weighing the supplies as received. Suitable storage should be provided in the kitchens for a day's supply of food and for keeping small quantities of canned goods and other things which the cook needs for emergency use. Ice storage can be used in the kitchens, but it is much more satisfactory to use small mechanical refrigerating plants.

Molasses, sirup, vinegar, cereals, in fact, no food supply should be issued in original barrels or packages unless the quantity used by a kitchen for one meal will require a full original package. There is a great loss in issuing supplies in bulk, since then there is no check on the cooks. Food may be conserved by giving out all supplies in small quantities as needed.

BASIC-QUANTITY RATION TABLES.

All food supplies, so far as possible, should be issued to the kitchens and dining rooms on basic quantity ration tables.

For many years there have been tables in use for the calculation of interest, income on investments, wage tables, lumber tables, etc., which are published in different forms for convenience in making calculations. The basic-quantity ration table is the application of this idea to the issuance of food supplies to kitchens and dining rooms. Tables of this kind have been in successful use since 1911 in a number of institutions. The quantities given in the illustrative tables are those found satisfactory for institutions for the care and treatment of the insane. It would not be feasible in these suggestions to attempt to make out tables to suit all institutions. Institutions of other kinds can readily prepare tables for their own use.

To prepare a basic-quantity ration table the quantities of food being issued to kitchens and dining rooms should be tabulated, and these quantities divided by the total number of persons for whom they were issued and the total number of meals for which they were served. The final quotient will represent the per capita issue for each meal. For institutions where there are several kitchens, this plan should be followed out in computing the food supplies issued to each kitchen. When this has been done the per capita quantities issued should be set up in vertical columns so that comparisons may be made and the general average issue may be found by adding the quantities given of each of the food supplies issued to the several kitchens, and then dividing by the number of kitchens. For example:

	Per capita issue.	
	Dried beans.	Barley for soups.
	Ounces.	*Ounces.*
Kitchen 1	1.0	0.3
Kitchen 2	1.5	.2
Kitchen 3	2.0	.4
Total	4.5	.9
Average per capita issue	1.5	.3

Where there are noticeable differences between the quantity issued to a particular kitchen and the average per capita issue to all kitchens, these differences should be investigated. The next step, after computing the above, is to prepare a basic-quantity ration table for use in the institution. It may be necessary to get up several of these tables before the right quantities are arrived at. Each table may be prepared, as described above, by setting up the quantities in the same manner as indicated in specimen Table A, which shows the quantities found satisfactory for State hospitals for the insane after a number of years' experiment with different tables. The quantities given in Table A may need to be changed for inmates of institutions of a different kind; but the quantities for employees should be found sufficient for nearly all institutions.

In arriving at the proper per capita quantities per meal to be used in making the basic-quantity ration table for different classes of inmates of State and public institutions, a waste-accounting system will be found of great assistance in ascertaining whether the quantities arrived at for the table are sufficient or insufficient. Careful comparisons should be made of the waste and usable food returned from the dining rooms to the kitchens, for in this way it can be determined how nearly the tables meet the situation.

The basic-quantity ration tables are to prevent a practice quite general at institutions of fixing upon a certain quantity of food supplies to send to a kitchen, and continuing to send the same quantity without consideration of the increase or decrease in the number of persons for whom the kitchen is cooking. The basic-quantity ration tables are to insure that a proper and uniform quantity of uncooked food will be furnished to the kitchens for the number to be fed.

Table A.—A basic-quantity ration table, which appears later, is divided into a number of columns. Column 1 gives the food supplied. Column 2 the grams of protein to the pound. Column 3 the calories to the pound. Column 4 the per capita allowance per person for each meal (unless otherwise stated in the table). Columns 5 and 6 refer to the per capita allowance per person given in column 4.

From these base figures a table may be made up for the institution suited to its population, beginning with the lowest number usually present and increasing by tens or twenties. Thus the columns will be headed "50, 60, 70," or "300, 320, 340," etc. The rest is simple arithmetic. Multiply the figures in column 3 by the population figure at the head of the column, divide by 16 to reduce to pounds, and set down in the proper square the result to the nearest half pound. Each kitchen should requisition the quantity shown in the table for the number of persons nearest the number it serves, which may be varied if the waste reports show that too much or too little has been issued.

The figures in the table may be adjusted to allow the necessary range of supplies as experience indicates. As far as possible the nearest quarter, half, or three-quarters of a pound are used for convenience in making out requisitions. The storehouse, kitchens, and persons in charge of the dietary department are furnished each week with the census of the different places for which food supplies are drawn and the requisitions for the week are based on this census. It can be readily seen that after the tables have been prepared, it is as easy to order one quantity as another. As the quantity to be

ordered is governed by the census for the week, the same proportion per capita of food is supplied the kitchen month in and month out.

The dietaries should be made out one week in advance and a copy supplied to the persons in charge of the dietary arrangements of the institution. From these dietaries the cooks in charge of the kitchens should prepare their requisitions on the storehouse, using the quantities as shown by the basic-quantity ration tables. The chef and storekeeper, or their representatives, compare the quantities requisitioned with the basic-quantity ration table to see that the right quantity is called for and that the articles are in stock. It is important that the dining rooms have a copy of the dietary, so that they will know in advance what dishes to have ready for serving the meal when the food arrives from the kitchen.

TABLE A.—*Basic quantity ration table.*

ONE MEAL: BREAKFAST—PATIENTS AND EMPLOYEES.

[The figures 50 to 500 denote population.]

	Grams of protein to pound.	Calories to pound.	Per capita allowance in ounces.	Calories from protein per capita.	Total calories per capita.	50	60	70	80	90	100	110	120	130	140	150	160	170	180
						Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Corn meal	41.73	1,635	0.7	7.3027	71.5312	2¼	2¾	3	3½	4	4½	4¾	5¼	5¾	6	6½	7	7½	8
Hominey	37.65	1,608	.7	6.5900	70.3500	2¼	2¾	3	3½	4	4½	4¾	5¼	5¾	6	6½	7	7½	8
Rolled oats	75.75	1,800	.8	15.1497	90.0000	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9
Wheat flakes	54.89	1,680	.8	10.9780	84.0000	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9
Farina	49.89	1,641	.8	9.9779	82.0500	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9
Rice	36.29	1,620	.8	7.2580	81.0000	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9
ONE MEAL: DINNER—PATIENTS ONLY.																			
Barley for soup	38.55	1,610	0.3	2.8911	30.1875	¾	1	1¼	1½	1¾	1⅝	2	2¼	2½	2⅝	2¾	3	3¼	3⅜
Rice for soup	36.29	1,620	.3	2.7217	30.3750	¾	1	1¼	1½	1¾	1⅝	2	2¼	2½	2⅝	2¾	3	3¼	3⅜
Rice for pudding	36.29	1,620	.6	5.4430	60.7500	1¾	2¼	2¾	3	3¼	3⅜	4¼	4½	5	5¼	5½	6	6¾	6⅞
Hominey	37.65	1,608	.6	5.6474	60.3000	1¾	2¼	2¾	3	3¼	3⅜	4¼	4½	5	5¼	5⅝	6	6¾	6⅞
Crackers for soup	47.63	1,892	.6	7.1444	70.9500	1¾	2¼	2¾	3	3½	3¾	4¼	4½	5	5½	5¾	6	6¾	6⅞
Sago	1.81	1,650	.5	.2262	51.5625	1½	1¾	2	2¼	2½	2¾	3¼	3½	3¾	4¼	4½	5	5¼	5¾
Green peas (dried) for soup	111.59	1,565	.5	13.9486	48.9060	1½	1¾	2	2¼	2½	2¾	3¼	3½	3¾	4¼	4½	5	5¼	5¾
Tapioca	1.81	1,650	.5	.2262	51.5625	1½	1¾	2	2¼	2½	2¾	3¼	3½	3¾	4¼	4½	5	5¼	5¾
Dried split peas for soup	111.60	1,612	.5	13.9500	50.3750	1½	1¾	2	2¼	2½	2¾	3¼	3½	3¾	4¼	4½	5	5¼	5¾
Corn starch	.....	1,632	.4	.....	40.8000	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	3¾	4	4¼	4½
Fresh vegetables. (See Fresh vegetable list.)																			
Roast beef	67.59	1,020	4	67.5888	255.0000	12½	15	17½	20	22½	25	27½	30	32½	35	37½	40	42½	45
Roast mutton	66.68	1,136	4	66.6800	284.0000	12½	15	17½	20	22½	25	27½	30	32½	35	37½	40	42½	45
Boiling beef (shanks)	43.55	391	5	54.4360	122.1875	15¼	18¾	21¾	25	28¼	31¼	34¼	37½	40½	43¾	46¾	50	53	56¼
Corned beef (barrel)	64.86	1,245	5	81.0750	389.0625	15¼	18¾	21¾	25	28¼	31¼	34¼	37½	40½	43¾	46¾	50	53	56¼
Roast pork (fresh)	58.51	1,338	5	73.1375	418.1250	15¼	18¾	21¾	25	28¼	31¼	34¼	37½	40½	43¾	46¾	50	53	56¼
Fresh fish, dressed, heads off	38.56	205	5	48.2000	64.0625	15¼	18¾	21¾	25	28¼	31¼	34¼	37½	40½	43¾	46¾	50	53	56¼
Beef stew (necks)	68.50	515	3	51.3750	96.5625	9½	11¼	13¼	15	16¾	18¾	20¾	22½	24½	26¼	28¼	30	31¾	33¾
Mutton stew	66.68	1,136	3	50.0100	213.0000	9½	11¼	13¼	15	16¾	18¾	20¾	22½	24½	26¼	28¼	30	31¾	33¾
Frankfurters	88.91	1,155	3	66.6825	216.5625	9½	11¼	13¼	15	16¾	18¾	20¾	22½	24½	26¼	28¼	30	31¾	33¾
Hamburger roast	68.50	515	3	51.3750	96.5625	9½	11¼	13¼	15	16¾	18¾	20¾	22½	24½	26¼	28¼	30	31¾	33¾
Sauerkraut	7.94	144	3	5.9550	27.0000	9½	11¼	13¼	15	16¾	18¾	20¾	22½	24½	26¼	28¼	30	31¾	33¾
Farina	49.89	1,641	.7	8.73075	71.7937	2½	2¾	3	3½	4	4½	4¾	5¼	5¾	6	6½	7	7½	8
Beans, dried	102.06	1,520	1.5	38.2725	142.5000	4¾	5¾	6½	7½	8½	9¼	10¼	11¼	12¼	13¼	14	15	16	16¾
Beans, lima, dried	82.10	1,586	1.5	30.7875	148.6875	4¾	5¾	6½	7½	8½	9¼	10¼	11¼	12¼	13¼	14	15	16	16¾
Potatoes. (See Fresh vegetable list.)																			
Canned vegetables. (See Canned vegetable list.)																			
Salt fish. (See Salt fish list.)																			
Salt pork (barrel)	8.62	3,555	5	10.7750	1,110.9375	15¾	18¾	21¾	25	28¼	31¼	34¼	37½	40½	43¾	46¾	50	53	56¼

ONE MEAL: BREAKFAST—PATIENTS AND EMPLOYEES.

	190	200	210	220	230	240	250	260	270	280	290	300	320	340	360	380	400	420	440	460	480	500
	Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Corn meal	8¼	8¾	9¼	9¾	10	10½	11	11⅓	12	12½	12⅔	13	14	15	16	17	18	18½	19	20	21	22
Hominey	8¼	8¾	9¼	9¾	10	10½	11	11⅓	12	12½	12⅔	13	14	15	16	17	18	18½	19	20	21	22
Rolled oats	9½	10	10½	11	11⅓	12	12½	13	13½	14	14⅓	15	16	17	18	19	20	21	22	23	24	25
Wheat flakes	9½	10	10½	11	11⅓	12	12½	13	13½	14	14⅓	15	16	17	18	19	20	21	22	23	24	25
Farina	9½	10	10½	11	11⅓	12	12½	13	13½	14	14⅓	15	16	17	18	19	20	21	22	23	24	25
Rice	9½	10	10½	11	11⅓	12	12½	13	13½	14	14⅓	15	16	17	18	19	20	21	22	23	24	25

ONE MEAL: DINNER—PATIENTS ONLY.

Barley for soup	3½	3¾	4	4¼	4⅜	4½	4¾	5	5⅛	5¼	5½	5¾	6	6½	6¾	7¼	7½	7¾	8¼	8⅜	9	9½
Rice for soup	3½	3¾	4	4¼	4⅜	4½	4¾	5	5⅛	5¼	5½	5¾	6	6½	6¾	7¼	7½	7¾	8¼	8⅜	9	9½
Rice for pudding	7¼	7½	7⅞	8¼	8⅜	9	9½	9¾	10¼	10½	10¾	11¼	12	12½	13½	14¼	15	15⅜	16½	17¼	18	18¾
Hominey	7¼	7½	7⅞	8¼	8⅜	9	9½	9¾	10¼	10½	10¾	11¼	12	12½	13½	14¼	15	15⅜	16½	17¼	18	18¾
Crackers for soup	7¼	7½	7⅞	8¼	8⅜	9	9½	9¾	10¼	10½	10¾	11¼	12	12½	13½	14¼	15	15⅜	16½	17¼	18	18¾
Sago	6	6¼	6½	6¾	7¼	7½	7¾	8¼	8½	8¾	9	9½	10	10½	11¼	11¾	12½	13¼	13¾	14½	15	15¾
Green peas (dried) for soup	6	6¼	6½	6¾	7¼	7½	7¾	8¼	8½	8¾	9	9½	10	10½	11¼	11¾	12½	13¼	13¾	14½	15	15¾
Tapioca	6	6¼	6½	6¾	7¼	7½	7¾	8¼	8½	8¾	9	9½	10	10½	11¼	11¾	12½	13¼	13¾	14½	15	15¾
Dried split peas for soup	6	6¼	6½	6¾	7¼	7½	7¾	8¼	8½	8¾	9	9½	10	10½	11¼	11¾	12½	13¼	13¾	14½	15	15¾
Corn starch	4¾	5	5¼	5½	5¾	6	6¼	6½	6¾	7	7¼	7½	8	8½	9	9½	10	10½	11	11½	12	12½
Fresh vegetables. (See Fresh vegetable list.)																						
Roast beef	47½	50	52½	55	57½	60	62½	65	67½	70	72½	75	80	85	90	95	100	105	110	115	120	125
Roast mutton	47½	50	52½	55	57½	60	62½	65	67½	70	72½	75	80	85	90	95	100	105	110	115	120	125
Boiling beef (shanks)	59½	62½	65¾	68¾	71¾	75	78	81¼	84½	87½	90¾	93¾	100	106¼	112½	118¾	125	131¼	137½	143¾	150	156¼
Corned beef (barrel)	59½	62½	65¾	68¾	71¾	75	78	81¼	84½	87½	90¾	93¾	100	106¼	112½	118¾	125	131¼	137½	143¾	150	156¼
Roast pork (fresh)	59½	62½	65¾	68¾	71¾	75	78	81¼	84½	87½	90¾	93¾	100	106¼	112½	118¾	125	131¼	137½	143¾	150	156¼
Fresh fish, dressed, heads off	59½	62½	65¾	68¾	71¾	75	78	81¼	84½	87½	90¾	93¾	100	106¼	112½	118¾	125	131¼	137½	143¾	150	156¼
Beef stew (necks)	35¾	37½	39¼	41¼	43¼	45	46¾	48¾	50¾	52½	54½	56¼	60	63¾	67½	71¼	75	78¾	82½	86¼	90	93¾
Mutton stew	35¾	37½	39¼	41¼	43¼	45	46¾	48¾	50¾	52½	54½	56¼	60	63¾	67½	71¼	75	78¾	82½	86¼	90	93¾
Frankfurters	35¾	37½	39½	41¼	43¼	45	46¾	48¾	50¾	52½	54½	56¼	60	63¾	67½	71¼	75	78¾	82½	86¼	90	93¾
Hamburger roast	35¾	37½	39¼	41¼	43¼	45	46¾	48¾	50¾	52½	54½	56¼	60	63¾	67½	71¼	75	78¾	82½	86¼	90	93¾
Sauerkraut	35¾	37½	39¼	41¼	43¼	45	46¾	48¾	50¾	52½	54½	56¼	60	63¾	67½	71¼	75	78¾	82½	86¼	90	93¾
Farina	8¼	8¾	9¼	9¾	10	10½	11	11⅓	12	12½	12⅔	13	14	15	16	17	18	18½	19	20	21	22
Beans, dried	17¾	18¾	19¼	20¾	21½	22½	23½	24⅔	25¼	26¼	27¼	28	30	31¾	33¾	35¾	37½	39½	41¼	43¼	45	46¾
Beans, lima, dried	17¾	18¾	19¼	20¾	21½	22½	23½	24⅔	25¼	26¼	27¼	28	30	31¾	33¾	35¾	37½	39½	41¼	43¼	45	46¾
Potatoes. (See Fresh vegetable list.)																						
Canned vegetables. (See Canned vegetable list.)																						
Salt fish. (See Salt fish list.)																						
Salt pork (barrel)	59½	62½	65¾	68¾	71¾	75	78	81¼	84½	87½	90¾	93¾	100	106¼	112½	118¾	125	131¼	137½	143¾	150	156¼

TABLE A.—*Basic quantity ration table*—Continued.

ONE MEAL: SUPPER—PATIENTS ONLY.

[The figures 50 to 500 denote population.]

	Grams of protein to pound.	Calories to pound.	Per capita allowance in ounces.	Calories from protein per capita.	Total calories per capita.	50	60	70	80	90	100	110	120	130	140	150	160	170	180
						Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Corn meal	41.73	1,635	0.6	6.2595	61.3125	1¾	2¼	2¾	3	3½	3¾	4¼	4½	5	5¼	5⅝	6	6½	6¾
Hominy	37.65	1,608	.6	5.6475	60.3000	1¾	2¼	2¾	3	3½	3¾	4¼	4½	5	5¼	5⅝	6	6½	6¾
Rice	36.29	1,620	.8	7.2580	81.0000	2½	3	3½	4	4½	5	5½	6	6½	7	7¼	8	8½	9
Crackers (soda and oyster)	47.63	1,892	.6	7.1445	70.9500	1¾	2¼	2¾	3	3½	3¾	4⅛	4½	5	5¼	5⅝	6	6½	6¾
Macaroni	60.78	1,645	1	15.1950	102.8125	3½	3¾	4½	5	5⅝	6½	6⅞	7½	8¼	8⅝	9⅛	10	10⅜	11¼
Beans, dried	102.06	1,520	1.75	44.6512	166.2500	5¼	6½	7⅜	8¾	9¾	11	12¼	13½	14	15¼	16¼	17½	18½	19½
Cheese	121.56	1,980	1.5	45.5850	185.6250	1¾	5¾	6½	7½	8½	9¼	10¼	11¼	12¼	13¼	14	15	16	16¾
Prunes	8.16	1,161	1.5	3.0600	108.8437	4¾	5¾	6½	7½	8½	9¼	10¼	11¼	12¼	13¼	14	15	16	16¾
Dates	8.62	1,275	1.5	3.2325	119.5312	4¾	5¾	6½	7½	8½	9¼	10½	11½	12¼	13¼	14	15	16	16¾
Figs	19.50	1,280	1.5	7.3125	120.0000	4¾	5¾	6½	7½	8½	9¼	10¼	11¼	12¼	13¼	14	15	16	16¾
Apricots	21.32	1,260	1.5	7.9950	118.1250	4¾	5¾	6½	7½	8½	9¼	10¼	11¼	12¼	13¼	14	15	16	16¾
Peaches, evaporated	12.70	1,350	1.5	4.7625	126.5625	4¾	5¾	6½	7½	8½	9¼	10¼	11¼	12¼	13¼	14	15	16	16¾
Apples, evaporated	7.25	1,185	1.25	2.2656	92.5781	3¼	4¾	5¼	6¼	7¼	7⅞	8½	9½	10¼	10¾	11¾	12½	13¼	14
						No.	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*
Oysters	27.22	225	[1] 6	20.4150	42.1875	300	360	420	480	540	600	660	720	780	840	900	960	1,020	1,080
Clams	48.08	340	[1] 6	36.0600	63.7500	300	360	420	480	540	600	660	720	780	840	900	960	1,020	1,080
Salt fish. (See Salt fish list.)																			

ONE MEAL: EMPLOYEES ONLY.

						Oz.	*Oz.*	*Oz.*	*Lbs.*	*lb. oz.*	*lb. oz.*	*lb. oz.*	*lb. oz.*	*lb. oz.*	*lb. oz.*	*lb. oz.*	*Lbs.*	*lb. oz.*	*lb. oz.*
Gelatine	414.59	1,662	0.2	20.7295	20.7750	10	12	14	1	1 2	1 4	1 6	1 8	1 10	1 12	1 14	2	2 2	2 4
						Lbs.	*Lbs.*	*Lbs.*		*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Macaroni	60.78	1,645	1.25	18.9937	128.5940	3¾	4¾	5½	6¼	7¼	7¾	8½	9½	10½	10¾	11¾	12½	13¼	14
Beans, dried	102.06	1,520	1.5	38.2725	142.5000	4¾	5¾	6½	7½	8½	9½	10¾	11¾	12¼	13¼	14	15	16	16¾
Cheese	121.56	1,980	1.5	45.5850	185.6250	4¾	5¾	6½	7½	8½	9¼	10½	11¼	12¼	13½	14	15	16	16¾
Dried green peas (as vegetable)	111.59	1,565	2	55.7950	195.6250	6¼	7½	8¾	10	11¼	12½	13¾	15	16½	17½	18¾	20	21½	22½
Dried split peas or green peas for soup	111.60	1,612	.5	13.9500	50.3750	1½	1¾	2	2¼	2½	2¾	3¼	3½	3¾	4¼	4½	5	5¼	5¾
Peaches, evaporated	12.70	1,350	2	6.3500	168.7500	6¼	7½	8¾	10	11¼	12½	13¾	15	16¼	17½	18¾	20	21¼	22½
Apples, evaporated	7.25	1,185	1.75	3.1718	129.6093	5¼	6½	7¼	8¾	9¼	11	12¼	13¼	14	15¼	16¼	17½	18½	19½
Prunes	8.16	1,161	2	4.0800	145.1250	6¼	7½	8¼	10	11½	12½	13¾	15	16½	17½	18¾	20	21½	22½
						No.	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*
Eggs, 2 ounces each	59.42	635	[2] 2	59.4200	158.7500	100	120	140	160	180	200	220	240	260	280	300	320	340	360

ONE MEAL: SUPPER—PATIENTS ONLY.

	190	200	210	220	230	240	250	260	270	280	290	300	320	340	360	380	400	420	440	460	480	500
	Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Corn meal	7¼	7½	7¾	8¼	8¾	9	9½	9¾	10¼	10½	10¾	11¼	12	12¾	13½	14¼	15	15¾	16½	17¼	18	18¾
Hominy	7¼	7½	7¾	8¼	8¾	9	9½	9¾	10¼	10½	10¾	11¼	12	12¾	13½	14¼	15	15¾	16½	17¼	18	18¾
Rice	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	16	17	18	19	20	21	22	23	24	25
Crackers (soda and oyster)	7¼	7½	7¾	8¼	8¾	9	9½	9¾	10¼	10½	10¾	11¼	12	12¾	13½	14¼	15	15¾	16½	17¼	18	18¾
Macaroni	11¾	12½	13¼	13¾	14½	15	15¾	16¼	16¾	17½	18¼	18¾	20	21¼	22½	23¾	25	26¼	27½	28¾	30	31¼
Beans, dried	20¾	21¾	23	24	25½	26½	27¼	28¼	29½	30¾	31¾	32¾	35	37¼	39½	41½	43¾	46	48	50½	52½	54¾
Cheese	17¾	18¼	19¾	20¾	21½	22¾	23½	24½	25½	26¼	27¼	28	30	31¾	33¾	35¾	37½	39½	41½	43¼	45	46¾
Prunes	17¼	18¼	19¾	20¾	21½	22¾	23½	24½	25½	26¼	27¼	28	30	31¾	33¾	35¾	37½	39½	41½	43¼	45	46¾
Dates	17¼	18¼	19¾	20¾	21½	22¾	23½	24½	25½	26¼	27¼	28	30	31¾	33¾	35¾	37½	39½	41½	43¼	45	46¾
Figs	17¾	18¾	19¾	20¾	21½	22¾	23½	24½	25½	26¼	27¼	28	30	31¾	33¾	35¾	37½	39½	41½	43¼	45	46¾
Apricots	17¾	18¾	19¾	20¾	21½	22¾	23½	24½	25½	26¼	27¼	28	30	31¾	33¾	35¾	37½	39½	41½	43¼	45	46¾
Peaches, evaporated	17¾	18¾	19¾	20¾	21½	22¾	23½	24½	25½	26¼	27¼	28	30	31¾	33¾	35¾	37½	39½	41½	43¼	45	46¾
Apples, evaporated	14¾	15¾	16¼	17¼	18	18¾	19½	20¼	21	21½	22¾	23½	25	26½	28¼	29½	31½	32¼	34½	36	37½	39
	No.	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*		*No.*
Oysters	1,140	1,200	1,260	1,320	1,380	1,440	1,500	1,560	1,620	1,680	1,740	1,800	1,920	2,040	2,160	2,280	2,400	2,520	2,640	2,760	2,880	3,000
Clams	1,140	1,200	1,260	1,320	1,380	1,440	1,500	1,560	1,620	1,680	1,740	1,800	1,920	2,040	2,160	2,280	2,400	2,520	2,640	2,760	2,880	3,000
Salt fish. (See Salt fish list.)																						

ONE MEAL: EMPLOYEES ONLY.

	lbs. oz. 2 6	*Lbs.* 2½	*lbs. oz.* 2 10	*Lbs.* 2¾	*lbs. oz.* 2 14	*Lbs.* 3	*lbs. oz.* 3 2	*Lbs.* 3¼	*lbs. oz.* 3 6	*Lbs.* 3½	*lbs. oz.* 3 10	*Lbs.* 3¾	*Lbs.* 4	*Lbs.* 4¼	*Lbs.* 4½	*Lbs.* 4¾	*Lbs.* 5	*Lbs.* 5¼	*Lbs.* 5½	*Lbs.* 5¾	*Lbs.* 6	*Lbs.* 6¼
	Lbs.		*Lbs.*		*Lbs.*		*Lbs.*		*Lbs.*		*Lbs.*											
Macaroni	14¾	15¾	16¼	17¼	18	18¾	19¼	20¼	21	21½	22¼	23½	25	26½	28¼	29½	31¼	32¾	34¼	36	37½	39
Beans, dried	17¾	18¾	19¾	20¾	21½	22½	23½	24½	25½	26¼	27¼	28	30	31¾	33¾	35¾	37½	39½	41¼	43¼	45	46¾
Cheese	17¾	18¾	19¾	20¾	21½	22½	23½	24½	25½	26¼	27¼	28	30	31¾	33¾	35¾	37½	39½	41¼	43¼	45	46¾
Dried green peas (as vegetable)	23¾	25	26¼	27½	28¾	30	31¼	32½	33¾	35	36¼	37½	40	42½	45	47½	50	52½	55	57½	60	62½
Dried split peas or green peas for soup	6	6¼	6½	6¾	7¼	7½	7¾	8¼	8½	8¾	9	9½	10	10¾	11½	11¾	12½	13¼	13¾	14½	15	15¾
Peaches, evaporated	23¾	25	26¼	27½	28¾	30	31¼	32½	33¾	35	36¼	37½	40	42½	45	47½	50	52½	55	57½	60	62½
Apples, evaporated	20¾	21¾	23	24	25½	26¼	27¼	28½	29½	30¾	31¾	32¾	35¾	37½	39½	41½	43¼	46	48	50¼	52½	54¾
Prunes	23¾	25	26¼	27½	28¾	30	31¼	32½	33¾	35	36¼	37½	40	42½	45	47½	50	52½	55	57½	60	62½
	No.	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*
Eggs, 2 ounces each	380	400	420	440	460	480	500	520	540	560	580	600	640	680	720	760	800	840	880	920	960	1,000

[1] 3 ounces.

[2] 4 ounces.

TABLE A.—*Basic quantity ration table*—Continued.

ONE MEAL: EMPLOYEES ONLY—Continued.

[The figures 50 to 500 denote population.]

	Grams of protein to pound.	Calories to pound.	Per capita allowance in ounces.	Calories from protein per capita.	Total calories per capita.	50	60	70	80	90	100	110	120	130	140	150	160	170	180
						Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Bacon	41.28	2,715	3	30.9600	509.0625	9½	11¼	13¼	15	16¾	18¾	20¾	22½	24½	26¼	28¼	30	31¾	33¾
						No.	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*
Eggs, 2 ounces each	59.42	635	[1] 1	29.7100	79.3750	50	60	70	80	90	100	110	120	130	140	150	160	170	180
						Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Bacon	41.28	2,715	2	20.6400	339.3750	6¼	7½	8¾	10	11¼	12½	13¾	15	16¼	17½	18¾	20	21¼	22½
Liver	92.53	584	4	92.5300	146.0000	12½	15	17½	20	22½	25	27½	30	32½	35	37½	40	42½	45
Frankfurters	88.91	1,155	4	88.9100	288.7500	12½	15	17½	20	22½	25	27½	30	32½	35	37½	40	42½	45
Ham, smoked as purchased	64.41	1,635	5	80.5125	510.9375	15¾	18¾	21¾	25	28¼	31¼	34¼	37½	40½	43¾	46¾	50	53	56¼
						No.	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*
Eggs, 2 ounces	59.42	635	[1] 1	29.7100	79.3750	50	60	70	80	90	100	110	120	130	140	150	160	170	180
						Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Canned corned beef for hash (meat)	119.30	1,270	4	119.3000	317.5000	12½	15	17½	20	22½	25	27½	30	32½	35	37½	40	42½	45
Fresh beef for hash (meat)	67.59	1,020	4	67.5900	255.0000	12½	15	17½	20	22½	25	27½	30	32½	35	37½	40	42½	45
Canned salmon	98.88	915	4	98.8800	228.7500	12½	15	17½	20	22½	25	27½	30	32½	35	37½	40	42½	45
Roast beef	67.59	1,020	7	118.2825	446.2500	22	26¼	30¾	35	39½	43¾	48½	52½	56¾	61¼	65¾	70	74½	78¾
Roast mutton	66.68	1,136	7	116.6900	497.0000	22	26¼	30¾	35	39½	43¾	48½	52½	56¾	61½	65¾	70	74½	78¾
Roast pork, fresh	58.51	1,338	8	117.0200	669.0000	25	30	35	40	45	50	55	60	65	70	75	80	85	90
Fresh fish dressed, heads off	38.56	205	9	86.7600	115.3125	28¼	33¾	39½	45	50¾	56¼	61¾	67½	73¼	78¾	84½	90	95	101½
Hamburger roast (meat)	68.50	515	5	85.6250	160.9375	15¾	18¾	21¾	25	28¼	31½	34½	37½	40½	43¾	46¾	50	53	56¼
Hamburger steak (meat)	68.50	515	5	85.6250	160.9375	15¾	18¾	21¾	25	28¼	31¼	34¼	37½	40½	43¾	46¾	50	53	56¼
Beef stew (meat)	68.50	515	6	102.7500	193.1250	18¾	22½	26¼	30	33¾	37½	41¼	45	48¾	52½	56¼	60	63¾	67½
Mutton stew (meat)	66.68	1,136	6	100.0200	426.0000	18¾	22½	26¼	30	33¾	37½	41¼	45	48¾	52½	56¼	60	63¾	67½
Salt fish. (See Salt fish list.)																			
Liver	92.53	584	6	138.7950	219.0000	18¾	22½	26¼	30	33¾	37½	41¼	45	48¾	52½	56¼	60	63¾	67½
Cold meat	67.59	1,020	5	84.4875	318.7500	15¾	18¾	21¾	25	28¼	31½	34¼	37½	40½	43¾	46¾	50	53	56¼
Beefsteak	67.59	1,020	7	118.2825	446.2500	22	26¼	30¾	35	39½	43¾	48½	52½	56¾	61½	65¾	70	74½	78¾
Mutton chops	66.68	1,136	8	133.3600	568.0000	25	30	35	40	45	50	55	60	65	70	75	80	85	90
Pork chops	58.51	1,338	8	117.0200	669.0000	25	30	35	40	45	50	55	60	65	70	75	80	85	90
Ham, smoked	64.41	1,635	8	128.8200	817.5000	25	30	35	40	45	50	55	60	65	70	75	80	85	90
Potatoes. (See Fresh vegetable list.)																			
Rice	36.29	1,620	.8	7.2580	81.0000	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9
Tapioca	1.81	1,650	.8	.3620	82.5000	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9
Sago	1.81	1,650	.8	.3620	82.5000	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9
Fresh pork sausage	78.93	1,642	6.5	128.2612	667.0625	20¼	24¼	28½	32½	36½	40¾	44¾	48¾	52¾	56¾	61	65	69	73

	190	200	210	220	230	240	250	260	270	280	290	300	320	340	360	380	400	420	440	460	480	500
	Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Bacon	35¾	37½	39½	41½	43½	45	46¾	48¾	50¾	52½	54½	56½	60	63¾	67½	71¼	75	78¾	82½	86¼	90	93¾
	No.	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*
Eggs, 2 ounces each	190	200	210	220	230	240	250	260	270	280	290	300	320	340	360	380	400	420	440	460	480	500
	Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Bacon	23¾	25	26¼	27½	28¾	30	31¼	32½	33¾	35	36¼	37½	40	42½	45	47½	50	52½	55	57½	60	62½
Liver	47½	50	52½	55	57½	60	62½	65	67½	70	72½	75	80	85	90	95	100	105	110	115	120	125
Frankfurters	47½	50	52½	55	57½	60	62½	65	67½	70	72½	75	80	85	90	95	100	105	110	115	120	125
Ham, smoked as purchased	59½	62½	65¾	68¾	71¾	75	78	81¼	84½	87½	90¾	93¾	100	106¼	112½	118¾	125	131¼	13 ½	143¾	150	156¼
	No.	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*
Eggs, 2 ounces	190	200	210	220	230	240	250	260	270	280	290	300	320	340	360	380	400	420	440	460	480	500
	Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Canned corned beef for hash (meat)	47½	50	52½	55	57½	60	62½	65	67½	70	72½	75	80	85	90	95	100	105	110	115	120	125
Fresh beef for hash (meat)	47½	50	52½	55	57½	60	62½	65	67½	70	72½	75	80	85	90	95	100	105	110	115	120	125
Canned salmon	47½	50	52½	55	57½	60	62½	65	67½	70	72½	75	80	85	90	95	100	105	110	115	120	125
Roast beef	83¼	87½	91¾	96¼	100¼	105	109½	113¾	118¼	122½	126¾	131¼	140	148¾	157½	166¼	175	183¾	192½	201¼	210	218¾
Roast mutton	83¼	87½	91¾	96¼	100¾	105	109½	113¾	118¼	122½	126¾	131¼	140	148¾	157½	166¼	175	183¾	192½	201¼	210	218¾
Roast pork, fresh	95	100	105	110	115	120	125	130	135	140	145	150	160	170	180	190	200	210	220	230	240	250
Fresh fish, dressed, heads off	106¾	112½	118¼	123¾	129½	135	140¾	146¼	151¾	157½	163¼	168¾	180	191¼	202½	213¾	225	236¼	247½	258¾	270	281¼
Hamburger roast (meat)	59½	62½	65¾	68¾	71¾	75	78	81¼	84½	87½	90¾	93¾	100	106¼	112½	118¾	125	131¼	137½	143¾	150	156¼
Hamburger steak (meat)	59½	62½	65¾	68¾	71¾	75	78	81¼	84½	87½	90¾	93¾	100	106¼	112½	118¾	125	131¼	137½	143¾	150	156¼
Beef stew (meat)	71¼	75	78¾	82½	86¼	90	93¾	97½	101¼	105	108¾	112½	120	127½	135	142½	150	157½	165	172½	180	187½
Mutton stew (meat)	71¼	75	78¾	82½	86¼	90	93¾	97½	101¼	105	108¾	112½	120	127½	135	142½	150	157½	165	172½	180	187½
Salt fish. (See Salt fish list.)																						
Liver	71¼	75	78¾	82¼	86¼	90	93¾	97½	101¼	105	108¾	112½	120	127½	135	142½	150	157½	165	172½	180	187½
Cold meat	59½	62½	65¾	68¾	71¾	75	78	81¼	84½	87½	90¾	93¾	100	106¼	112½	118¾	125	131¼	137½	143¾	150	156¼
Beef steak	83¼	87½	91¾	96¼	100¼	105	109½	113¾	118¼	122½	126¾	131¼	140	148¾	156½	166¼	175	183¾	192½	201¼	210	218¾
Mutton chops	95	100	105	110	115	120	125	130	135	140	145	150	160	170	180	190	200	210	220	230	240	250
Pork chops	95	100	105	110	115	120	125	130	135	140	145	150	160	170	180	190	200	210	220	230	240	250
Ham, smoked	95	100	105	110	115	120	125	130	135	140	145	150	160	170	180	190	200	210	220	230	240	250
Potatoes. (See Fresh vegetable list.)																						
Rice	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	16	17	18	19	20	21	22	23	24	25
Tapioca	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	16	17	18	19	20	21	22	23	24	25
Sago	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	16	17	18	19	20	21	22	23	24	25
Fresh pork sausage	77¼	81¼	85½	89¼	93½	97½	101½	105¼	109¼	113¾	117½	121¾	130	138	146¼	154½	162½	170¾	178¾	186¾	195	203

[1] 3 ounces.

TABLE A.—*Basic quantity ration table*—Continued.

ONE MEAL—WORKERS ONLY.

[The figures 50 to 500 denote population.]

	Grams of protein to pound.	Calories to pound.	Per capita allowance in ounces.	Calories from protein per capita.	Total calories per capita.	50	60	70	80	90	100	110	120	130	140	150	160	170	180
						Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Canned corned beef	119.30	1,270	4	119.3000	317.5000	12½	15	17½	20	22½	25	27½	30	32½	35	37½	40	42½	45
Canned salmon	98.88	915	4	98.8800	228.7500	12½	15	17½	20	22½	25	27½	30	32½	35	37½	40	42½	45
Cold meat	67.59	1,020	5	84.4875	318.7500	15¼	18¾	21¼	25	28¼	31¼	34¼	37½	40½	43¾	46¾	50	53	56¼
Salt fish. (See Salt fish list.)																			
Canned corned beef hash (meat)	119.30	1,270	3	89.4750	238.1250	9½	11¼	13¼	15	16¾	18¾	20¾	22½	24½	26¼	28¼	30	31¾	33¾
Beef stew (meat)	68.50	515	3	51.3750	96.5625	9½	11¼	13¼	15	16⅞	18¾	20¾	22½	24½	26¼	28¼	30	31¾	33¾
Fresh beef hash (meat)	67.59	1,020	3	50.6925	191.2500	9½	11¼	13¼	15	16⅞	18¾	20¾	22½	24½	26¼	28¼	30	31¾	33¾
Frankfurters	88.91	1,155	3	66.6825	216.5625	9½	11¼	13¼	15	16⅞	18¾	20¾	22½	24½	26¼	28¼	30	31¾	33¾
PATIENTS AND EMPLOYEES—DAILY.																			
Coffee			0.38			1½	1½	1¾	1⅞	2	2¼	2½	2¾	3	3⅛	3½	3¾	4	4¼
						Oz.	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*
Tea			.10			5	6	7	8	9	10	11	12	13	14	15	16	17	18
						Qts.	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*
Milk—fluid	14.96	314	(1)	23.9360	125.6000	10	12	14	16	18	20	22	24	26	28	30	32	34	36
Milk—condensed	43.55	757	(2)	26.1292	113.5500	3¾	4½	5¼	6	6¾	7½	8¼	9	9¾	10½	11¼	12	12¾	13½
						Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Sugar		1,750	1.25		136.7187	3¼	4¾	5¼	6¼	7¼	7¾	8¼	9¼	10¼	10¾	11¾	12¼	13¼	14
Butter	4.54	3,488	1.25	14.1875	272.5000	3¾	4¾	5¼	6¼	7¼	7¾	8½	9½	10¼	10¾	11¾	12½	13¼	14

ONE MEAL: FRESH VEGETABLES—PATIENTS AND EMPLOYEES (AS PURCHASED).

EMPLOYEES.

Potatoes, white	8.16	295	7	14.2850	129.0625	22	26¼	30¾	35	39½	43¾	48¼	52½	56¾	61¼	65¾	70	74½	78¾
Potatoes, sweet	6.35	440	7	11.1125	192.5000	22	26¼	30¾	35	39½	43¾	48¼	52½	56¾	61¼	65¾	70	74½	78¾
PATIENTS.																			
Potatoes, white	8.16	295	5	10.2000	92.1875	15¾	18¾	21¾	25	28¼	31¼	34½	37½	40½	43¾	46¾	50	53	56¼
Potatoes, sweet	6.35	440	5	7.9375	137.5000	15¾	18¾	21¾	25	28¼	31¼	34½	37½	40½	43¾	46¾	50	53	56¼

ONE MEAL—WORKERS ONLY.

	190	200	210	220	230	240	250	260	270	280	290	300	320	340	360	380	400	420	440	460	480	500
	Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Canned corned beef	47½	50	52½	55	57½	60	62½	65	67½	70	72½	75	80	85	90	95	100	105	110	115	120	125
Canned salmon	47½	50	52½	55	57½	60	62½	65	67½	70	72½	75	80	85	90	95	100	105	110	115	120	125
Cold meat	59½	62½	65⅝	68¾	71⅞	75	78	81¼	84½	87½	90⅞	93⅞	100	106¼	112½	118¾	125	131¼	137½	143¾	150	156¼
Salt fish. (See Salt fish list.)																						
Canned corned beef hash (meat)	35⅜	37½	39½	41¼	43¼	45	46⅞	48⅜	50⅝	52½	54⅛	56¼	60	63¾	67½	71¼	75	78¾	82½	86¼	90	93¾
Beef stew (meat)	35⅜	37½	39½	41¼	43¼	45	46⅞	48⅜	50⅝	52½	54⅛	56¼	60	63¾	67½	71¼	75	78¾	82½	86¼	90	93¾
Fresh beef hash (meat)	35⅜	37½	39½	41¼	43¼	45	46⅞	48⅜	50⅝	52½	54⅛	56¼	60	63¾	67½	71¼	75	78¾	82½	86¼	90	93¾
Frankfurters	35⅜	37½	39½	41¼	43¼	45	46¾	48⅜	50¼	52½	54½	56¼	60	63¾	67½	71¼	75	78¾	82½	86¼	90	93¾

PATIENTS AND EMPLOYEES—DAILY.

Coffee	4½	4¾	5	5¼	5½	5¾	6	6¼	6½	6¾	7	7¼	7½	7¾	8½	8¾	9¼	9¾	10¼	10¾	11¼	11¾
	Oz.	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*	*Oz.*
Tea	19	20	21	22	23	24	25	26	27	28	29	30	32	34	36	38	40	42	44	46	48	50
	Qts.	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*
Milk—fluid	38	40	42	44	46	48	50	52	54	56	58	60	64	68	72	76	80	84	88	92	96	100
Milk—condensed[1]	14¼	15	15¾	16½	17¼	18	18¾	19½	20¼	21	21¾	22½	24	25½	27	28½	30	31½	33	34½	36	37½
	Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Sugar	14¾	15¾	16¼	17¼	18	18¾	19½	20¼	21	21½	22¼	23¼	25	26½	28¼	29½	31¼	32¼	34¼	36	37½	39
Butter	14¾	15¼	16¼	17¼	18	18¾	19½	20¼	21	21½	22¼	23½	25	26½	28¼	29½	31¼	32¼	34½	36	37½	39

ONE MEAL: FRESH VEGETABLES—PATIENTS AND EMPLOYEES (AS PURCHASED).

Employees.

Potatoes, white	83¼	87½	91¾	96¼	100¾	105	109½	113¾	118¼	122½	126¾	131¼	140	148¾	157½	166¼	175	183¾	192½	201¼	210	218¾
Potatoes, sweet	83¼	87½	91¾	96¼	100¾	105	109½	113¾	118¼	122½	126¾	131¼	140	148¾	157½	166¼	175	183¾	192½	201¼	210	218¾

Patients.

Potatoes, white	59½	62½	65¾	68¾	71¾	75	78	81¼	84½	87½	90¾	93¾	100	106¼	112½	118¾	125	131¼	137½	143¾	150	156¼
Potatoes, sweet	59½	62½	65¾	68¾	71¾	75	78	81¼	84½	87½	90¾	93¾	100	106¼	112½	118¾	125	131¼	137½	143¾	150	156¼

[1] 0.4 pint or 6.4 ounces.

[2] 0.15 pint or 2.4 ounces.

[3] 1 quart of condensed milk is considered as equal to 4 quarts of fluid milk.

TABLE A. *Basic quantity ration table* Continued.

ONE MEAL: PATIENTS AND EMPLOYEES.

[The figures 50 to 500 denote population.]

	Grams of protein to pound.	Calories to pound.	Per capita allowance in ounces.	Calories from protein per capita.	Total calories per capita.	50	60	70	80	90	100	110	120	130	140	150	160	170	180
						Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Turnips	4.08	120	7	7.1400	52.5000	22	26 1/4	30 3/4	35	39 1/4	43 3/4	48 1/4	52 1/2	56 3/4	61 1/4	65 1/4	70	74 1/2	78 3/4
Carrots	4.08	159	6	6.1200	59.6250	18 3/4	22 1/2	26 1/4	30	33 3/4	37 1/2	41 1/4	45	48 3/4	52 1/2	56 1/4	60	63 3/4	67 1/2
Beets	5.90	160	7	10.3250	70.0000	22	26 1/4	30 3/4	35	39 1/2	43 3/4	48 1/4	52 1/2	56 3/4	61 1/4	65 1/4	70	74 1/2	78 3/4
Parsnips	5.90	236	7	10.3250	103.2500	22	26 1/4	30 3/4	35	39 1/2	43 3/4	48 1/4	52 1/2	56 3/4	61 1/4	65 1/4	70	74 1/2	78 3/4
Onions	6.35	190	3	4.7625	35.6250	9 1/2	11 1/4	13 1/4	15	16 3/4	18 3/4	20 1/4	22 1/2	24 1/2	26 1/4	28 1/4	30	31 1/4	33 3/4
Cabbage	6.35	115	8	12.7000	57.5000	25	30	35	40	45	50	55	60	65	70	75	80	85	90

ONE MEAL: PATIENTS AND EMPLOYEES—(CANNED VEGETABLES).

Canned tomatoes	5.44	103	4	5.4400	25.7500	12 1/2	15	17 1/2	20	22 1/2	25	27 1/2	30	32 1/2	35	37 1/2	40	42 1/2	45
Canned peas	16.33	235	3	12.2475	44.0625	9 1/2	11 1/4	13 1/2	15	16 3/4	18 3/4	20 1/4	22 1/2	24 1/2	26 1/4	28 1/4	30	31 1/2	33 3/4
Canned string beans	9.52	170	4	9.5200	42.5000	12 1/2	15	17 1/2	20	22 1/2	25	27 1/2	30	32 1/2	35	37 1/2	40	42 1/2	45
Canned corn	12.70	430	3	9.5250	80.6250	9 1/2	11 1/4	13 1/4	15	16 3/4	18 3/4	20 3/4	22 1/4	24 1/2	26 1/4	28 1/4	30	31 1/2	33 3/4
Canned kidney beans	31.68	544	3	23.7600	102.0000	9 1/2	11 1/4	13 1/4	15	16 3/4	18 3/4	20 3/4	22 1/2	24 1/2	26 1/4	28 1/4	30	31 1/4	33 3/4

ONE MEAL: PATIENTS AND EMPLOYEES—(SALT FISH).

Codfish	72.58	325	5	90.7250	101.5625	15 3/4	18 3/4	21 3/4	25	28 1/4	31 1/4	34 1/4	37 1/2	40 1/2	43 3/4	46 3/4	50	53	56 1/4
Codfish for codfish balls	72.58	325	2.5	45.3625	50.7812	7 3/4	9 1/2	11	12 1/2	14	15 3/4	17 1/4	18 3/4	20 1/2	21 3/4	23 1/2	25	26 1/2	28 1/4
Herring	50.80	362	5	63.5000	113.1250	15 3/4	18 3/4	21 3/4	25	28 1/4	31 1/4	34 1/4	37 1/2	40 1/2	43 3/4	46 3/4	50	53	56 1/4
Mackerel	88.89	711	5	111.1125	222.1875	15 3/4	18 3/4	21 3/4	25	28 1/4	31 1/4	34 1/4	37 1/2	40 1/2	43 3/4	46 3/4	50	53	56 1/4
Salmon, smoked	98.88	915	5	123.6000	285.9375	15 3/4	18 3/4	21 3/4	25	28 1/4	31 1/4	34 1/4	37 1/2	40 1/2	43 3/4	46 3/4	50	53	56 1/4

ONE MEAL: PATIENTS AND EMPLOYEES.

	190	200	210	220	230	240	250	260	270	280	290	300	320	340	360	380	400	420	440	460	480	500
	Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Turnips	83½	87½	91¾	96¼	100¾	105	109½	113¾	118¼	122½	126¾	131¼	140	148¾	157½	166¼	175	183¾	192½	201¼	210	218¾
Carrots	71¼	75	78¾	82½	86¼	90	93¾	97½	101¼	105	108¾	112½	120	127½	135	142½	150	157½	165	172½	180	187½
Beets	83¼	87½	91¾	96¼	100¾	105	109½	113¾	118¼	122½	126¾	131¼	140	148¾	157½	166¼	175	183¾	192½	201¼	210	218¾
Parsnips	83¼	87½	91¾	96¼	100¾	105	109½	113¾	118¼	122½	126¾	131¼	140	148¾	157½	166¼	175	183¾	192½	201¼	210	218¾
Onions	35¾	37½	39¼	41¼	43¼	45	46¾	48¾	50¼	52½	54½	56¼	60	63¾	67½	71¼	75	78¾	82½	86¼	90	93¾
Cabbage	95	100	105	110	115	120	125	130	135	140	145	150	160	170	180	190	200	210	220	230	240	250

ONE MEAL: PATIENTS AND EMPLOYEES—(CANNED VEGETABLES).

Canned tomatoes	47½	50	52½	55	57½	60	62½	65	67½	70	72½	75	80	85	90	95	100	105	110	115	120	125
Canned peas	35¾	37½	39¼	41¼	43¼	45	46¾	48¾	50¾	52½	54½	56¼	60	63¾	67½	71¼	75	78¾	82½	86¼	90	93¾
Canned string beans	47½	50	52½	55	57½	60	62½	65	67½	70	72½	75	80	85	90	95	100	105	110	115	120	125
Canned corn	35¾	37½	39½	41¼	43¼	45	46¾	48¾	50¾	52½	54½	56¼	60	63¾	67½	71¼	75	78¾	82½	86¼	90	93¾
Canned kidney beans	35¾	37½	39½	41¼	43¼	45	46¾	48¾	50¾	52½	54½	56¼	60	63¾	67½	71¼	75	78¾	82½	86¼	90	93¾

ONE MEAL: PATIENTS AND EMPLOYEES—(SALT FISH).

Codfish	59½	62½	65¾	68¾	71¾	75	78	81¼	84¼	87½	90¾	93¾	100	106¼	112½	118¾	125	131¼	137½	143¾	150	156¼
Codfish for codfish balls	29¾	31¼	32¾	34¼	35¾	37½	39	40¾	42¼	43¾	45¼	46¾	50	53¼	56¼	59¾	62½	65¾	68¾	71¾	75	78¼
Herring	59½	62½	65¼	68¾	71¾	75	78	81¼	84½	87½	90¾	93¾	100	106¼	112½	118¾	125	131¼	137½	143¾	150	156¼
Mackerel	59½	62½	65¾	68¾	71¾	75	78	81¼	84½	87½	90¾	93¾	100	106¼	112½	118¾	125	131¼	137½	143¾	150	156¼
Salmon, smoked	59½	62½	65¾	68¾	71¾	75	78	81¼	84½	87½	90¾	93¾	100	106¼	112½	118¾	125	131¼	137½	143¾	150	156¼

TABLE A.—*Basic quantity ration table*—Continued.

MISCELLANEOUS.

[The figures 50 to 500 denote population.]

	Grams of protein to pound.	Calories to pound.	Per capita allowance in ounces.	Calories from protein per capita.	Total calories per capita.	50	60	70	80	90	100	110	120	130	140	150	160	170	180
						Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Beef carcass, fresh, average	67.59	1,020																	
Mutton carcass, average	66.68	1,136																	
Veal	70.76	557																	
Pork carcass, fresh, average	58.51	1,338																	
Pork, salt (barrel)	8.62	3,555																	
						Gills.	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*
Sirup (12 pounds to gallon)		1,250	(1)		134.9999	16	19	22	25	29	32	35	38	42	45	48	51	55	58
Molasses, cane (12 pounds to gallon)		1,225	(1)		132.2998	16	19	22	25	29	32	35	38	42	45	48	51	55	58
						Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Bread, white, miscellaneous	42.18	1,174	12	126.5400	[2] 880.5000	$37\frac{1}{2}$	45	$52\frac{1}{2}$	60	$67\frac{1}{2}$	75	$82\frac{1}{2}$	90	$97\frac{1}{2}$	105	$112\frac{1}{2}$	120	$127\frac{1}{2}$	135
Bread, brown	24.48	1,026	12	73.4400	[2] 769.5000	$37\frac{1}{2}$	45	$52\frac{1}{2}$	60	$67\frac{1}{2}$	75	$82\frac{1}{2}$	90	$97\frac{1}{2}$	105	$112\frac{1}{2}$	120	$127\frac{1}{2}$	135
Bread, corn	35.83	1,175	12	107.4900	[2] 881.2500	$37\frac{1}{2}$	45	$52\frac{1}{2}$	60	$67\frac{1}{2}$	75	$82\frac{1}{2}$	90	$97\frac{1}{2}$	105	$112\frac{1}{2}$	120	$127\frac{1}{2}$	135
Bread, Graham	40.37	1,180	12	121.1000	[2] 885.0000	$37\frac{1}{2}$	45	$52\frac{1}{2}$	60	$67\frac{1}{2}$	75	$82\frac{1}{2}$	90	$97\frac{1}{2}$	105	$112\frac{1}{2}$	120	$127\frac{1}{2}$	135
Bread, rye	40.82	1,153	12	122.4600	[2] 864.7500	$37\frac{1}{2}$	45	$52\frac{1}{2}$	60	$67\frac{1}{2}$	75	$82\frac{1}{2}$	90	$97\frac{1}{2}$	105	$112\frac{1}{2}$	120	$127\frac{1}{2}$	135
Bread, rye and wheat	53.98	1,163	12	161.9400	[2] 872.2500	$37\frac{1}{2}$	45	$52\frac{1}{2}$	60	$67\frac{1}{2}$	75	$82\frac{1}{2}$	90	$97\frac{1}{2}$	105	$112\frac{1}{2}$	120	$127\frac{1}{2}$	135

	190	200	210	220	230	240	250	260	270	280	290	300	320	340	360	380	400	420	440	460	480	500
	Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Beef carcass, fresh, average	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mutton carcass, average	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Veal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pork carcass, fresh, average	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pork, salt (barrel)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Gills.	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*	*Gills.*
Sirup (12 pounds to gallon)	61	64	68	71	74	77	81	84	87	90	93	97	103	110	116	123	129	136	142	149	155	162
Molasses, cane (12 pounds to gallon)	61	64	68	71	74	77	81	84	87	90	93	97	103	110	116	123	129	136	142	149	155	162
	Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Bread, white, miscellaneous	142½	150	157½	165	172½	180	187½	195	202½	210	217½	225	240	255	270	285	300	315	330	345	360	375
Bread, brown	142½	150	157½	165	172½	180	187½	195	202½	210	217½	225	240	255	270	285	300	315	330	345	360	375
Bread, corn	142½	150	157½	165	172½	180	187½	195	202½	210	217½	225	240	255	270	285	300	315	330	345	360	375
Bread, Graham	142½	150	157½	165	172½	180	187½	195	202½	210	217½	225	240	255	270	285	300	315	330	345	360	375
Bread, rye	142½	150	157½	165	172½	180	187½	195	202½	210	217½	225		255	270	285	300	315	330	345	360	375
Bread, rye and wheat	142½	150	157½	165	172½	180	187½	195	202½	210	217½	225	240	255	270	285	300	315	330	345	360	375
													240									

[1] 0.324 gill for one meal.

[2] Daily.

Items should be so selected in preparing a dietary that 10 to 15 per cent of the total calories will be produced from proteins.

Whenever it is found necessary to supplement the items of Table A with additional ones, this may easily be done by ascertaining the quantity to be issued and referring to a table showing the food value of the food supply which it is wished to serve, and after this compute the quantity required for the different populations.

It is advisable for institutions to compute at least monthly the food value of the ration issued. Columns 2 and 3 of Table A are for this purpose. It is also recommended that institutions take each of their weekly dietaries and compute the proteins and calories produced by the dietary each day. Table B, which follows, is given to illustrate how this may be done. For ready reference a series of these tables may be made out to cover the different seasons of the year, so when a dietary is to be made up, the person making it will have something to guide him in its preparation. Table B is a form used by the Military Hospitals Commission of Canada in connection with their standard basic dietary ration tables.

TABLE B.—*Daily food values.*

(Regular dietary for patients of a New York State institution, Jan. 11, 1918.)

Food.	Calories from protein.	Total calories.
Breakfast.		
Boiled rice, 8 ounces	7.2580	81.0000
Sirup, 0.324 gill		134.9999
Bread, butter, coffee.		
Dinner.		
Baked fresh fish, 5 ounces	48.2000	64.0625
Drippings, 0.1 ounce		25.5125
Potatoes, white, 5 ounces	10.2000	92.1875
Sauerkraut, 3 ounces	5.9550	27.0000
Bread.		
Tapioca pudding, 0.5 ounce	.2262	51.5625
Sugar, 0.1 ounce		10.9375
Eggs, 0.03 ounce	.8913	2.3812
Milk, 0.025 pint	.0935	.4906
Supper.		
Boiled beans, 1.5 ounces	38.2725	142.5000
Drippings, 0.1 ounce		25.5125
Bread, butter, tea.		
Daily allowance:		
Bread, white, 12 ounces	126.5400	880.5000
Butter, 1.25 ounces	14.1875	272.5000
Sugar, 1.25 ounces		136.7187
Milk, 0.6 pint	22.4400	117.7500
Total for day	274.2640	2,065.6154

Table B represents the regular dietary for patients of an institution for the insane. The quantities of protein and calories may seem small, but when it is considered that the bodily requirements of the patients vary largely, being from 1,500 to 3,500 calories daily, and that other food is issued to working patients and to those requiring special diet, the average daily per capita proteins and calories issued for the month would probably be from 90 to 100 grams of protein and 2,500 to 3,000 calories per person.

PREPARATION AND COOKING OF FOODS.

The preparation and cooking of foods are so intimately related that it would be difficult to differentiate between the two.

In the preparation of food it is advisable to utilize power-driven machinery where there is sufficient work to warrant it; i. e., dough mixers, dividers, molders, meat choppers, dishwashers, knife cleaners, and kitchen machines. A vegetable-peeling machine should be used if possible. Machines for bread cutting, meat slicing, and butter cutting will save much food.

The preparation of meat naturally begins in the butcher shop. The meat should be requisitioned according to the basic quantity ration tables. Beef, mutton, and pork for roasting and beef and mutton for boiling should all be weighed in the butcher shop in the usual way. Then each separate lot for each kitchen should be boned and the meat, where necessary, rolled and tied to keep it together. It is desirable to bone all meat with the exception of steak, chops, and stews. By "boning" is meant the removal of all bones from meat to be roasted or boiled so that it may be carved with a meat-slicing machine. The meat should be cut into as large pieces as it is possible to roast in the oven or in a steam roaster, for large pieces can be carved better in a slicing machine than small ones. Bones removed should be sent to the kitchens with the meat. When meat is boiled the bones may be boiled with it. It is well to roast the meat separate from the bones, which can be simmered slowly in a steam roaster or steam kettle and the juice added to that produced by roasting. These are to be used in making gravy. Where meat is boiled any excess of liquid not needed for gravy may be used for making broth or soup. It is advisable to serve soup or broth on days when boiled beef or mutton is used, so that the juices or stock from the meat and the bones may be utilized in the soup. After the bones have been stewed for the above purpose, additional nutriment may be secured by placing them in the regular stock kettle for further simmering.

For roasting meat and for baking, oven thermometers should be used. These are now manufactured for this purpose and there are booklets published by the manufacturers giving the temperatures at which certain meats should be roasted and at which it is well to carry the ovens for different kinds of baking.

It is advisable to roast meat as rare as it will be eaten, since this process alone effects a large saving. As fast as small pieces of meat are roasted they should be removed from the roaster or from the oven. Rare, medium, and well-done pieces can be obtained in this way.

Excess fat which is not needed in cooking the meat should be trimmed from it in the butcher shop before it is issued to the kitchens. A good practice is to save fat under normal conditions, but now that it is so urgently needed for war purposes especial care should be exercised to see that this is done. By this procedure a large amount can be secured for cooking purposes, which will make it possible for institutions to reduce their purchases of fats.

The use of oven thermometers will effect a saving in meat of from 3 to 10 per cent, and even as high as 20 per cent in some cases, by causing the cook to maintain the proper temperatures.

Where there is excess fat left on the meat it is decomposed by the heat in roasting, or it may be lost when the meat is boiled, unless it is carefully skimmed from the kettle. All drippings or other fat produced in cooking should be carefully saved. In each kitchen there should be a kettle set apart for the saving of fats, so after they have become too darkened for further service in foods they may be used in soap.

It is not only a waste but also a detriment to the meat to carry too high oven temperatures. The fat not only becomes decomposed but the protein of the meat becomes so hardened that it is rendered almost indigestible. Aversions on the part of persons to rare meat can be overcome by gradually cooking the meat more rare each week and in this way accustoming them to eating it so. By the proper cooking of meat, and carving it with slicers, as high a saving as 30 per cent may be made over poor cooking and hand carving. A meat slicer will bring about a material saving over the most skillful hand carving.

To prevent the meat being roasted too much, it may be weighed just before it is placed in the oven, and again after it is roasted. Roast beef and mutton should not lose in cooking more than 20 per cent in weight, and roast pork 25 to 30 per cent. Chops and steaks may be weighed before and after broiling or frying. Other meats may also be weighed to advantage before and after cooking. It may not be practicable to do this at each meal unless there is sufficient help available, but tests should be made from time to time, so as to be sure that there is no undue loss in the cooking of the meat. This weighing will save a surprising quantity.

In the preparation of wheat substitutes and desserts, milk and eggs are very necessary. As the quantities needed vary from week to week it will give more elasticity to the dietary and more satisfaction to the inmates if the institution carries a stock of milk powders and desiccated eggs. In the preparation of wheat and meat substitutes, so necessary for institutions on account of the war, the use of milk and eggs in the making of quick breads and of meat substitutes can not be overemphasized.

There are good grades of whole milk, skim milk, and buttermilk powders now in the market, and also of desiccated eggs, all of which can be used in the recipes in the same way as ordinary milk and eggs. The only difference in the food value of whole milk and skim milk is the butter fat which has been removed from the latter. With this exception the skim milk has the same food value as the whole.

Where institutions can buy whole milk, skim milk, and buttermilk locally for their usual daily needs, it is advisable to purchase a supply sufficient for drinking purposes and a small additional quantity for cooking. By this method no excess fluid milk will be on hand and used should the census be suddenly reduced. Where milk can not be purchased, the powdered milk will be found to be a valuable substitute, particularly in cooking, as there is no noticeable difference between the results obtained in cooking with either.

The use of desiccated eggs in baking and cooking reduces labor and is also more economical, since they can be purchased at a lower price than the shell eggs, because egg powder is prepared when eggs are plentiful. Both milk powders and egg powders save transportation expenses and lessen the burdens of the transportation companies. They are also a great convenience to an institution when the

regular source of supply of milk and eggs may be interfered with on account of weather conditions or inability of dealers to deliver these supplies.

To promote the conservation of vegetables there should be a dehydrating and canning plant located near the storehouse; also a central peeling room for the preparation of all the vegetables used in the institution. This room should be supplied with modern equipment for the washing and peeling of vegetables requiring peeling, and the preparation of others for use in the kitchens and for canning.

Very material savings of vegetables can be made through the centralization of peeling and other preparation and the operation of the dehydrating, canning, and pickling plant.

SUGGESTIONS AS TO DIETARIES.

Great care should be taken in arranging dietaries to see that they cover the needs of the institution. The following is important:

(*a*) Conceive the whole day as the unit rather than the individual meal.

(*b*) Endeavor to distribute the protein, fat, and carbohydrate throughout the day so that no meal will have a striking preponderance of one kind of foodstuff. For example, meat served with macaroni and cheese concentrates the protein in one meal. Potatoes with rice served as vegetables concentrates the starch, and fried potatoes with pie concentrates the fat.

(*c*) With the exception of a few such staples as bread, butter, and milk, try to avoid serving any food in the same form twice in the same day; serve it, preferably, only once in any form.

(*d*) Try to avoid serving any food which gives character to a dish twice in the same meal even in different forms. Do not, for instance, select tomato soup, fresh tomatoes, or canned tomatoes for the same meal.

(*e*) As the number of articles served increases, the size of each portion served should be decreased.

ISSUING OF BREAD AND COOKED FOODS TO DINING ROOMS AND SERVING IN DINING ROOMS.

The issuing of bread and cooked foods to the dining rooms and the serving are so intimately associated that they will be treated of in one division, but under separate subdivisions so far as possible.

(A) A separate bread table is given because bread is one of the most prolific sources of loss encountered in institutions. It is a practice quite general to allow the bakery to deliver on verbal orders whatever bread the kitchens and dining rooms may order. It is therefore recommended that bread be issued only on duly approved requisitions of the dining rooms, since by so doing the baker knows at the beginning of each week how much he must bake that week; and he is therefore able to regulate the baking so as to have the proper quantity of bread on hand to meet the needs of the kitchens and dining rooms. This will prevent the baking of an oversupply, which might become stale. The dining room will take better care of the bread and will give more careful supervision to the serving

of it. Elimination of the waste of bread in kitchens and dining rooms will result in a large saving in flour and other cereals.

(B) Instructions for use of the Basic-Quantity Ration Table for Bread:

To arrive at the proper amount of bread a dining room or kitchen should requisition, the quantity given in the table for the number of persons nearest to the number eating in the dining room should be used unless the quantity returned to the kitchen shows that too much has been received, in which event the next lower amount should be requisitioned.

In making requisitions the number of employees and the number of patients eating in the dining rooms should be given in the upper left-hand corner of the requisition.

Basic quantity ration table for bread, daily issue, employees and patients.

Population	20	25	30	35	40	45	50	55	60	65	70	75	80
Pounds	12½	15½	18¾	22	25	28	31	34	37½	41	44	47	50
Population	85	90	95	100	105	110	115	120	125	130	135	140	.....
Pounds	53	56	59	62	65	68	71½	75	78½	82	84½	87½	.....
Population	145	150	155	160	165	170	175	180	185	190	195	.....	.....
Pounds	91	94	97	100	103	106	109	112	115	118	121½	.....	.....
Population	200	205	210	215	220	225	230	235	240	245	250	.....	.....
Pounds	125	127½	130	133	136	140	144	147	150	153½	157	.....	.....
Population	255	260	265	270	275	280	285	290	295	300	305	.....	.....
Pounds	160½	164	166½	169	172	175	178½	182	185	187½	190½	.....	.....
Population	310	315	320	325	330	335	340	345	350	355	360	.....	.....
Pounds	194	197	200	203	206	209	212	215	218	221½	225	.....	.....
Population	365	370	375	380	385	390	395	400	405	410	415	.....	.....
Pounds	228	231	234	237	240	243	246½	250	253	256	259	.....	.....
Population	420	425	430	435	440	445	450	455	460	465	470	.....	.....
Pounds	262½	265	269	272	275	278	281	284	288	291	294	.....	.....
Population	475	480	485	490	495	500	.....	.....	.....	.....	.....	.....	.....
Pounds	297	300	303¾	307	309½	312½	.....	.....	.....	.....	.....	.....	.....

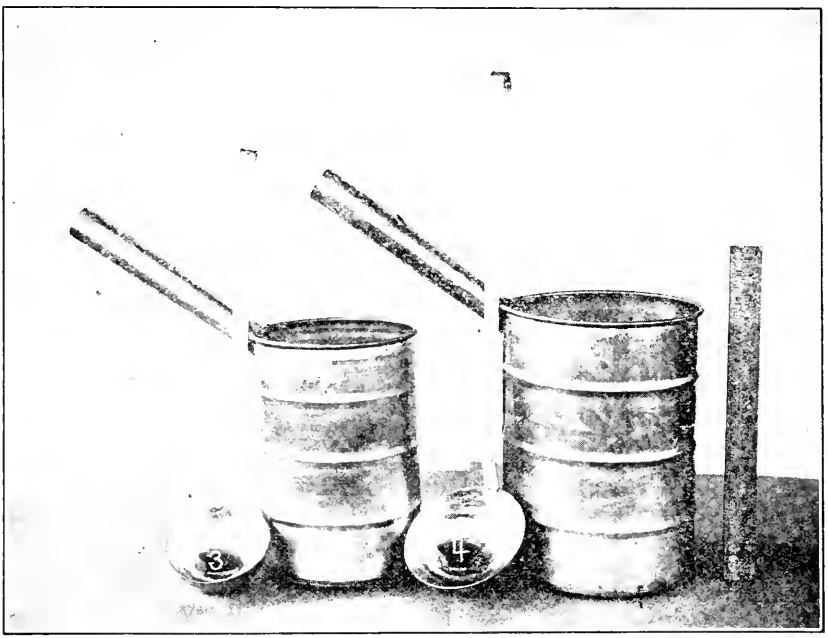
The above tables are based on an average issue of 10 ounces of yeast bread and quick breads per person daily. The per capita amount of bread will vary with the classes of inmates or patients. A separate table may be made for each class requiring a different per capita issue.

The bread should be cut with a bread cutter to insure uniform thickness; not too thick, but thick enough not to crumble in serving. Three-quarters of an inch will usually be found satisfactory.

In serving bread it is recommended that one slice be given out at a time. When the inmates enter the dining room it might be well to have a slice of bread beside each plate, for nearly everyone will

eat at least this much. A certain number will eat two slices, a few three, and a smaller number four; but if, as is the practice in some dining rooms, three slices are placed beside the inmate's plate at the beginning of the meal, there can be only one result—a large waste. When large loaves are baked the slices should be cut in two.

(C) Graduated ration dippers: There are many institutions now using graduated ration dippers. The photograph below shows the types:



A tinsmith can make the large dippers, Nos. 1 and 2; the ladles, Nos. 3 and 4, may be purchased at the stores of kitchen outfitters. The end of the handle of the graduated ration dipper is left open to form a socket for inserting a long wooden handle when dipping from large kettles.

Small graduated ration dipper, No. 1, at the left of the picture, is for use in the kitchen in measuring cooked cereals (oatmeal, corn meal, cornstarch, hominy, rice), baked or boiled beans, etc. Capacity, 4½ quarts. Size of dipper, 6 by 8¾ inches, inside measurements. This dipper is for 20 rations; each graduation represents five rations. The food is measured into food boxes with the ration dipper and sent to the dining rooms.

Ladle No. 3, used with this dipper, is of 1½ gills capacity and is known to the trade as an extra heavy No. 10. One ladleful represents a ration for one person. The ladle is for use in the dining room in serving cereals, beans, etc., as described above, and desserts of different kinds (puddings, stewed fruits, etc.) to both inmates and employees.

The large graduated ration dipper No. 2 at the right of the picture is for use in the kitchen, for measuring soups, oyster stews,

chowders, meat stew, etc. Its capacity is 6½ quarts, and its size is 6¾ by 9¾ inches, inside measurement. This dipper is for 20 rations, each graduation on the dipper representing 5 rations. The food is measured into cans or food boxes with the ration dipper and sent to the dining rooms.

Ladle No. 4, shown in the picture, is of 2½ gills capacity, and is for use in dining rooms in serving. One ladleful represents a ration for one person. The ladle is what is known to the trade as an extra heavy No. 12.

The large dippers shown in the photograph are made of tin and are beaded in an ordinary beading machine such as tinsmiths use for strengthening tinware. The cook, after preparing the food, instead of guessing at the quantity to be sent to the dining rooms, uses these dippers. Each week he is told the population of each of the dining rooms for which he cooks. This is put on a blackboard in the kitchen so all the persons working there may see it.

To illustrate, if there is cereal for breakfast the cook in distributing it to the several dining rooms measures it out into food boxes with the No. 1 dipper. If 90 persons be receiving their meals in the dining room, the cook should dip the No. 1 dipper four times full into the food box. The fifth time he would only fill it to the third graduation, which would make 95 rations of cereal sent to the dining room; this would be five more rations than the number of persons eating there. After the food box containing the cereal has arrived at the dining room, employees there should use their No. 3 ladles of 1½ gills capacity and should serve one ladleful to each person. If any one should desire more than one ladleful, or what is termed a second helping, the five extra rations would probably cover such requirements. If the five extra rations were not needed, they would be returned to the kitchen to be utilized in other meals. This method is employed for each article for which the graduated ration dippers may be used. The No. 4 ladle of 2½ gills for measuring soups, oyster stews, etc., is used in the same manner as the other. The use of the graduated ration dippers and the individual ration ladles guarantees that each inmate shall receive a uniform quantity of food, prevents waste, and reduces the work of the kitchen and dining-room employees.

(D) Meat: It is much more difficult to control the issue of cooked meat from the kitchens to the dining rooms and its service there than the issue and service of such articles as lend themselves readily to the use of graduated ration dippers. If there are enough steam roasters or ovens, a good way to control the issue of cooked meats to the dining rooms where the kitchen cooks for more than one is to weigh out the meat, when it is received from the butcher shop, into separate lots, using the basic quantity ration tables to determine the quantity each dining room should receive. After the meat is so divided it can be roasted in individual roasters, and after being carved can be sent to the dining rooms. Where there are an insufficient number of roasters or ovens, so that one can not be set aside for each dining room, the meat can be separated and numbered skewers thrust into the different pieces for each room. The numbered pieces can then be put together in one receptacle and roasted or boiled, as the case may be. When the meat is done, that belonging to each dining room can be carved separately and sent in.

Care should be taken in the dining room to see that uniform quantities are served at the first helping, for this will prevent waste and dissatisfaction among the inmates.

To demonstrate that uniform quantities had not been served in one institution, the meat just put onto the inmates' plates was weighed (by going hit and miss through the dining room) with the following results: 2 ounces, 4 ounces, 6 ounces, 7 ounces, 5 ounces, 4 ounces, 3 ounces, 4½ ounces, 4 ounces, etc. It can be readily seen why some of the inmates would complain of not having sufficient meat and others would have too much. The one aim in every dining-room service should be to give a helping of reasonable size, and if anyone wishes more to have some in reserve.

(E) Butter: In the service of butter and butter substitutes it is the usual practice of institutions to give these to inmates only for breakfast and supper, and at noontime when meat is used to serve a gravy. In apportioning butter and butter substitutes a saving may be made if a serving machine, or butter cutter, is used and but one piece is given out at a time. The same type of serving machine should be used in cutting the butter for the officers and employees. Those cutting 48 pieces to the pound are usually found to be acceptable.

(F) Dishes: As a means to secure satisfactory dining-room service the dishes should be standardized. Each dining room should have the same type of dishes of a proper size for the tables—dishes that will hold a portion. This method of service has been followed for a number of years by many restaurants, lunch rooms, and school lunch rooms. If dishes too small are used, the inmates receive too little food. If the dishes are too large for a portion, too great quantities are served, which results in a waste of food, especially where graduated ration dippers are not in use. Institutions frequently use bowls and cups from two to three times as large as they should be.

WASTE-ACCOUNTING SYSTEMS.

Persons who have inspected garbage cans know that meat, potatoes puddings, bread, etc., that appear to have been good when they were thrown into the cans are found mixed with other garbage, and one frequently hears the statement that institutional kitchens and dining-room employees are so wasteful that a number of families could be fed from the good food thrown away.

The inspection of garbage cans will not prevent lazy or indifferent employees from throwing good food left over from meals into the cans. They know that no adequate idea can be formed of the good food in a can of garbage, even though it be dumped from the can and examined. This fact is known to all administrative officers.

Let it be assumed that the employees are efficient and that each is conscientiously doing his work; still the inspection of garbage cans is a failure, for the employees have no definite means of determining how much garbage there should be. From week to week, without attracting attention, the garbage may gradually increase in bulk. The most alert employee will not notice this increase, for the quantities will fluctuate normally from day to day.

The failure of garbage-can inspection to give satisfactory results is due to the fact that its success depends solely on the opinion

formed by the person making the inspection, who only guesses that the garbage is not excessive, and as time passes this inadequate inspection becomes lax, for there is no way of checking results through making comparisons of different kitchens.

A waste-accounting system will overcome these difficulties. The good food that has not been served is classified as "usable food," which can be utilized by kitchens.

The waste (garbage) and the good food are returned to the kitchen in separate containers to be weighed and recorded on the forms provided for that purpose.

This method of handling waste and usable food is a satisfactory way of preventing good food from being thrown out. Through its operation everything is separated and weighed, so far as it can be, before being put into the garbage. This gives a complete record of the garbage, from which comparisons can be made of the waste (garbage) of the different kitchens.

The weighing of the "waste, not usable" (garbage) is one of the means of determining whether the inmates are receiving sufficient food.

The weighing of the "usable food," which can be utilized by the kitchens (good food), is an additional means of determining whether the inmates are receiving sufficient food.

The weighing of both the good food and the waste, not usable (garbage), shows whether the inmates are receiving sufficient food, and in the event of an official inquiry with regard to the feeding, the waste records would show whether or not enough food had been served.

Some of the advantages readily recognized by administrative officers of institutions to be obtained by the use of a waste-accounting system over garbage-can inspection are the following:

With a waste-accounting system all the waste (garbage) is separated and classified under various heads; the separation and weighing of the waste gives an administrative officer very necessary information as to the garbage left after a meal; and shows conclusively when comparisons are made between a number of dining rooms whether or not a dining room is having a normal waste of food. It is a decided advantage to an administrative officer to have accurate information as to what makes up the waste (garbage) left over from each meal. Too much waste of any particular article of food will indicate that either too much has been served or the food was badly prepared or for some reason was unpalatable. It at once prompts an inquiry.

On first thought it might seem that this information would be difficult to obtain, and that a large amount of additional work would be required in kitchens and dining rooms.

This, however, has not been the case, for the experience in the use of a waste-accounting system in the New York State hospitals and other institutions has shown that this information may be obtained without increasing the number of employees. In using a waste-accounting system all the waste (garbage) is separated and classified under the various heads. The food left on the plates which can not be separated into the different kinds is recorded as "plate scraps;" the bread which has been left on the tables which

has been served is recorded as "bread;" potatoes, as "potatoes," and where boiled potatoes are served the skins are classed as "potato skins;" meat, as "meat;" vegetables, as "vegetables;" fish bones, etc., according to name. It is necessary to classify all food served and left on plates, as garbage; food remaining in the serving room or on the table unserved should not be classified with the garbage, but should be returned to the kitchens as usable food.

The separation of waste from the inmates' tables is easily made by appointing one person (an inmate, if possible) at each table to look after the collection and separation of the waste from the table onto different plates. This can be done before the inmates leave the tables. The persons who regularly bring food to the dining-room table can carry the waste to the serving room. When the waste-accounting system is well under way it is found that inmates take an interest in the separation of the waste and will do this work without any urging.

The waste-accounting system has been used with very marked results in one of the New York State hospitals since 1911, and in all of the New York State hospitals since 1917; in some institutions in the State of Pennsylvania for over five years, and in all the institutions of the Province of Ontario, Canada, since November, 1914. Such marked results have been obtained through its use that institutions have reported that they had either to decrease the number of hogs formerly kept, as there was not sufficient garbage to feed them, or to purchase feed for the hogs. The feeding of garbage to swine is a ready way of utilizing garbage, but garbage is actually an expensive hog feed. From the standpoint of economy and food conservation all unnecessary garbage should be eliminated. No garbage therefore should be allowed to result from a meal with the idea that it is not a dead loss on account of being fed to the hogs, since hog feed usually can be purchased at a much less cost than the food supplies contained in garbage.

It is reasonable to expect the following results from the use of a waste-accounting system:

It checks underissues of food to dining rooms.

It checks overissues of foods to dining rooms.

It causes dining rooms to serve food more carefully.

It prevents dining rooms from throwing a large quantity of good food into the garbage cans.

It teaches the kitchen and dining-room employees to handle food supplies in a careful and economical manner.

It gives employees an incentive to do good work, as the waste reports show which are the efficiently run kitchens and dining rooms and which are the poorly run ones.

It is beneficial to the inmates of an institution because there is a minimum of waste of food in the kitchen and dining-room operations, more care in cooking and serving, and, as the waste is lessened, more food is available for service.

If the food supplies saved through the use of a waste-accounting system are not needed to improve the dietary of the inmates, there will be a reduced expenditure for supplies.

HOW TO USE A WASTE-ACCOUNTING SYSTEM.

In places where a waste-accounting system has not been used it would be best to institute it by first weighing all waste not usable, making one entry of it under "Plate scraps" on report blanks, hereafter illustrated, and every few days, as the kitchen and dining-room employees grow more accustomed to the new order of things, subdivisions of the waste can be made until the system is in full operation.

Great care should be given to the usable food which can be utilized by the kitchens, and this should be entered on the report blanks.

If uncarved meat is sent to the dining rooms, the meat should be trimmed from the bones returned to the kitchens before the bones are placed in the stock kettle. Unless this is done there will be a large waste of meat.

When using the waste-accounting system the dining rooms, instead of dumping all the waste from the tables into one container after the meal, gather up the different food articles separately which have been served and are left over on the plates and on the tables, so far as it can be done. Where there is more than one ward served in the same dining room, the different wards gather the waste from their tables and bring it to the serving room of the dining room. The same kind of waste from the tables of the different wards is put into one container and the several containers are then sent to the kitchen to be weighed.

The food which has not been served on the tables is classified as usable and returned to the kitchen in separate containers from the serving room to be weighed and utilized again in subsequent meals. An employee in each kitchen is detailed to weigh the waste and usable food when the dining rooms bring it back to the kitchen. When a kitchen is cooking for but two or three dining rooms the additional work is of little account, but where they receive waste from several dining rooms it causes some additional work when the system is first started. After the system is in operation it causes little trouble, and the cooks prefer this method to the old way because with the old system they could not know when too much of any food was supplied to a dining room. Under a garbage-can inspection the different kinds of food left from a meal are returned to the kitchen in one receptacle into which all kinds of food has been thrown, and if a dining room receives too much or too little of any kind of food it is hard for the cook to determine this fact. With the waste-accounting system, if too much of anything is sent to the dining room it is shown after the meal when the waste and usable food is returned and weighed.

The cook, in separating the food to send the proper quantities to the different dining rooms, has to use considerable judgment, and, unless he has some way of checking the subdivision he has made of the cooked food in bulk, he is very likely to make mistakes and send too large or too small quantities. The assistance the waste accounting system gives the chef and the cooks in the accurate distribution of cooked food to the different dining rooms more than offsets the work it causes.

The waste on the tables can be collected while the inmates are waiting for the cutlery to be cleared off. This will expedite the

work considerably, as all the regular dining-room employees and inmates need to do is to carry the plates containing the collected waste into the serving room and empty them into the proper container. The use of containers of uniform size and weight for sending the waste back to the kitchens for weighing will facilitate the operation of the system.

RECORD OF WASTE.

Accurate records should be kept of the waste and usable food returned from the kitchens and the dining rooms. For this purpose a waste-report blank should be used in the kitchens, on which to record what is returned. A supply of these blanks should be placed in a suitable binder and kept in the kitchens, proper entries being made after each meal on the blank for that day.

The following specimen forms have been found satisfactory in keeping the records of a waste-accounting system:

Daily report of waste and usable food returned by dining rooms to kitchens.—This form was approved by the New York State Hospital Commission for institutions under its supervision in 1911 and has been in successful use since that time. The actual amounts of waste and usable food returned to the kitchen of one of the New York State hospitals on May 1, 1918, have been inserted on the specimen of this form which follows. These figures have been used for two reasons: First, to illustrate the manner of insertion; second, to show the waste in an institution which has used the system for some years. Another copy of this form is given to show how the daily form may be used in making a monthly summary of the waste and the usable food returned from dining rooms to kitchen. As will be noted, the form has been slightly altered so the quantities of the different kinds of waste and usable food for each day of the month are entered, and at the bottom is given the total of each kind of waste and usable food, and also the grand totals.

Following the monthly summary sheet is a comparison sheet of the waste not usable and usable food for five kitchens of this institution for the month of May, 1918, which also gives the population served and daily per capita ounces of the waste and usable food returned by the dining rooms to the kitchens.

There is also a separate comparison sheet giving the waste and usable food of the employees only.

FORM 333.

STATE OF NEW YORK—STATE HOSPITAL COMMISSION.

Daily report of waste and usable food returned by dining rooms to kitchens.

(No. 1 kitchen; May 1, 1918.)

Dining rooms.	Waste not usable (pounds).									Usable food which can be utilized by kitchens (pounds).							
	Plate scraps.	Bread.	Potato skins.	Meat.	Potatoes.	Vegetables.	Pudding.	Fish bones.		Meat.	Bones.	Bread.	Cereals.	Potatoes.	Vegetables.		
BREAKFAST.																	
17	¼																
18																	
19																	
20																	
21	½																
22																	
23																	
24	¼																
BA	2	1										1					
BB	3	1½										1½					
DINNER.																	
17	¾																
18	¾																
19	1																
20	¾																
21	¾		½														
22	1																
23	½		½														
24	½						¼										
BA	7	2	4					3½				2					
BB	8	2	5½					4				2					
SUPPER.																	
17	½																
18																	
19																	
20																	
21	¼																
22																	
23	½																
24																	
BA	1½	1										1					
BB	2	1½										1½					
Total.	30½	9	10½				¼	7½				9					

The waste from dining rooms should be kept separate and each kind weighed. So far as is necessary all the food sent to the dining rooms should be served so that the patients can have an opportunity to eat it. Care should be taken not to hold too much back for a second helping, for if too much is held back and not served during the meal but is returned to the kitchen unused, it will appear that too large a quantity of food has been sent to that dining room. When a dining room returns practically no waste and another dining room considerable waste it is an indication that one dining room is receiving too much and the other too little and some should be cut from one and sent to the other, and this should be done before reducing the requisitions on the storehouse to prevent deprivation of the patients. All liquids—water, coffee, tea, etc.—should be kept out of the waste.

Waste is such things as can not be again utilized by the kitchens on account of having been served on the tables in the dining rooms. Usable food is such food as has not been served on said tables. Bones from carved meats are used in stock kettle and care should be taken to keep these separate. Blank spaces are left for kitchens to list anything returned which is not covered by the printed headlines.

"Plate scraps": When removing waste from the dining-room tables to be returned to the kitchens for weighing, cereals, potato skins, meat, vegetables, etc., should be kept separate and what can not be separated should be listed by the kitchens as plate scraps.

Daily report of waste and usable food returned by dining rooms to kitchens.

(No. 1 kitchen.)

Dining rooms.	Waste not usable (pounds).									Usable food which can be utilized by kitchens (pounds).				
	Plate scraps.	Bread.	Potato skins.	Meat.	Potatoes.	Vegetables.	Pudding.	Fish bones.	Cereals.	Meat.	Bones.	Bread.	Cereals.	Potatoes.
1918														
May 1	30	9	10	....	....	....	$\frac{1}{4}$	$7\frac{1}{2}$	....	....	....	9	....	....
2	28	8	....	....	$\frac{1}{2}$	$2\frac{1}{2}$	....	....	$\frac{1}{4}$	....	13	7	....	$\frac{1}{2}$
3	31	14	9	....	1	$\frac{1}{2}$	....	....	$\frac{1}{4}$	....	....	14	....	....
4	35	9	9	$\frac{1}{2}$	$2\frac{1}{2}$	....	....	....	....	....	30	7	....	1
5	32	7	$8\frac{1}{2}$	....	$\frac{1}{2}$	1	$\frac{1}{2}$	....	....	....	....	7	....	$\frac{1}{2}$
6	35	6	9	....	1	....	....	....	....	....	32	$7\frac{1}{2}$	....	1
7	32	10	10	....	2	$\frac{1}{2}$	....	....	....	....	32	$10\frac{1}{2}$	....	1
8	33	9	....	$\frac{1}{2}$	2	....	....	....	....	....	3	6	....	2
9	35	11	10	$1\frac{1}{2}$	....	1	$\frac{1}{4}$	....	....	$\frac{1}{2}$	....	7	....	1
10	32	10	....	....	$1\frac{1}{2}$	....	....	10	....	....	....	5	....	1
11	32	$8\frac{1}{2}$	8	....	1	1	$\frac{1}{4}$	....	$\frac{1}{4}$	....	36	$8\frac{1}{2}$	....	1
12	34	10	11	....	1	....	1	....	$\frac{1}{2}$	....	33	4	....	1
13	35	$8\frac{1}{2}$	11	....	$1\frac{1}{2}$	$\frac{3}{4}$	....	....	$\frac{1}{2}$	....	36	$9\frac{1}{2}$	....	$1\frac{1}{2}$
14	30	6	$9\frac{1}{2}$	....	$1\frac{1}{2}$	$\frac{1}{2}$	2	....	....	....	$36\frac{1}{2}$	6	....	1
15	34	11	$8\frac{1}{2}$	....	1	$1\frac{1}{4}$	$\frac{1}{4}$	$10\frac{1}{2}$	$\frac{1}{4}$	....	11	11	....	1
16	33	10	3	....	$1\frac{1}{2}$	$2\frac{1}{2}$	....	....	$\frac{1}{4}$	....	....	10	....	1
17	33	$7\frac{1}{2}$	11	....	$\frac{1}{2}$	....	....	12	$\frac{1}{2}$	....	....	10	....	....
18	33	$5\frac{1}{2}$	$7\frac{1}{2}$	....	$\frac{1}{2}$	$\frac{1}{2}$	....	....	....	....	31	....	....	....
19	34	$11\frac{1}{2}$	4	$7\frac{1}{2}$	....	$4\frac{1}{2}$	$1\frac{1}{2}$	....	$3\frac{1}{2}$	....	$11\frac{1}{2}$	$5\frac{1}{2}$	....	....
20	42	$11\frac{1}{2}$	$7\frac{1}{2}$	5	6	$2\frac{1}{2}$	....	....	....	2	30	$15\frac{1}{2}$	....	$5\frac{1}{2}$
21	36	$8\frac{1}{2}$	$2\frac{1}{2}$	....	$\frac{1}{2}$	....	....	....	....	....	$25\frac{1}{2}$	$11\frac{1}{2}$	....	....
22	37	$11\frac{1}{2}$	8	1	....	....	$\frac{1}{4}$	....	....	....	....	3	....	....
23	33	$12\frac{1}{2}$	10	....	1	1	....	....	$\frac{1}{2}$	....	32	$8\frac{1}{2}$	....	....
24	32	$10\frac{1}{2}$	$9\frac{1}{2}$	1	2	$\frac{1}{2}$	....	10	$\frac{1}{4}$	....	....	$6\frac{1}{2}$	....	....
25	32	7	$11\frac{1}{2}$	....	....	....	....	....	....	....	35	7	....	....
26	37	$9\frac{1}{2}$	10	....	$2\frac{1}{2}$	....	....	....	$\frac{1}{2}$	....	32	$9\frac{1}{2}$	....	$1\frac{1}{2}$
27	37	$9\frac{1}{2}$	$7\frac{1}{2}$	....	$1\frac{1}{2}$	....	....	....	$\frac{3}{4}$	....	34	$8\frac{1}{2}$	....	$\frac{1}{2}$
28	34	$12\frac{1}{2}$	....	....	3	....	....	....	....	....	36	9	....	2
29	33	9	$8\frac{1}{2}$	....	1	....	....	11	....	....	11	9	....	....
30	34	11	1	....	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	....	$\frac{1}{2}$	....	9	11	....	....
31	35	$11\frac{1}{2}$	....	1	$3\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$9\frac{1}{2}$	....	....	....	4	$3\frac{1}{2}$	5
Total	1,053	298	215	18	41	22	7	70	10	$2\frac{1}{2}$	550	$247\frac{1}{2}$	$3\frac{1}{2}$	29

Total of nonusable waste, 1,734 pounds; total of usable waste, $832\frac{1}{2}$ pounds.

Waste accounting system—Comparison sheet—May, 1918.

[Weight in pounds, except last column.]

WASTE NOT USABLE.

Kitchen.	Plate scraps.	Bread.	Potato skins.	Meat.	Potatoes.	Vegetables.	Pudding.	Cereal.	Miscellaneous and fish bones.	Total.	Number of patients and employees.	Daily average.	Daily average per capita, in ounces.
No. 1	1,053	298	215	18	41	22	7	10	70	1,734	1,007	55.93550	0.8887
No. 2	1,123	.....	387	15	.....	22	7	12	168	1,734	1,045	55.93550	.8566
No. 3	558	151	733	15	74	59	92	97	122	1,901	1,557	61.32260	.6301
No. 4	439	25	316	.....	.....	.....	1	12	74	867	794	27.96770	.5635
Group 5	343	20	312	26	30	38	28	38	91	926	653	29.87090	.7319
Total	3,516	494	1,963	74	145	141	135	169	525	7,162	5,056	231.03220	.7311

USABLE FOOD.

Kitchen.	Meat.	Bones.	Bread	Cereal.	Potatoes.	Vegetables	Miscellaneous.	Total.	Patients and employees.	Daily average.	Daily average per capita, in ounces.
No. 1	2	550	247	3	29	.....	.....	832½	1,007	26.85480	0.4266
No. 2	74	500	36	1	.....	.....	.....	611	1,045	19.70970	.3017
No. 3	17	1,673	.....	.....	.....	.....	4	1,694	1,557	54.64510	.5615
No. 4	.....	780	293	3	.....	9	2	1,087	794	35.06450	.7066
No. 5	12	345	3	4	10	4	14	392	653	12.64510	.3098
Total	105	3,848	579	11	39	13	20	4,616½	5,056	148.91940	.4713

EMPLOYEES ONLY—WASTE NOT USABLE.

Kitchen	Plate scraps.	Bread.	Potato skins.	Meat.	Potatoes.	Vegetables.	Pudding.	Cereal.	Miscellaneous and fish bones.	Total.	Employees.		Daily average.	Daily average per capita, in ounces.
											Men.	Women.		
No. 3	168	50	45½	12½	66	23½	22	27	14	428½	132	88	13.8225	1.0053
No. 4	77¾	.....	27½	.....	.....	.....	1	6½	9	121½	104	51	3.9274	.1054
Total	245¾	50	73	12½	66	23½	23	33½	23	550	236	139	17.7499	.7573

EMPLOYEES ONLY—USABLE FOOD.

Kitchen.	Meat.	Bread.	Bones.	Cereal.	Potatoes.	Vegetables.	Total.	Employees.		Daily average.	Daily average per capita, in ounces.
								Men.	Women.		
No. 3	12½	.....	629	.....	.....	.....	641½	132	88	20.6935	1.5050
No. 4	.....	16¾	222	2	9	1½	251¼	104	51	8.1048	.8366
Total	12½	16¾	851	2	9	1½	892¾	236	139	28.7983	1.2314

The weighing and the recording of the weights of the waste and the usable food are usually done by the kitchens, but in some institutions the dining rooms are required to do this. It is recommended that it be done by the kitchens, so that this work may be centralized, and the kitchens may keep a check on the dining rooms. It is also recommended that the other records (monthly summary and comparison sheets) be prepared in one of the administrative offices, from the information supplied by the daily reports of waste and usable food returned by dining rooms to kitchens.

A properly supervised dietary and the operation of a waste system will result in distinct economy. If an institution has a census of 2,000 persons it means that 6,000 meals are prepared each day. If but one ounce more of waste per person a day is thrown into the garbage than is necessary it will aggregate 125 pounds of food wasted per day; in one year the waste will be 45,625 pounds; if this waste is worth 10 cents a pound, as it may easily be, it will mean that for every 2,000 persons the institution is needlessly throwing away $4,562.50 worth of food. The average institution is likely to save considerably over one ounce per capita per day by a well-operated waste system. After the waste system is in thorough working order, the table waste per capita from employees should not exceed 1½ ounces daily, and for inmates not more than 1 ounce. The returned usable food is usually from one-half to three-fourths as much as the waste.

KITCHEN AND DINING-ROOM EMPLOYEES.

Food is the most expensive item in the budget of institutions. Moreover, it is more easily wasted and spoiled, without the knowledge of the administrative officers, than any of the other supplies used. Not only does its misuse result in heavy financial loss, but at the same time the inmates are likely to suffer. Food in institutions and hospitals to-day is one of the chief therapeutic means of maintaining and restoring health. When food is so important from a financial and therapeutic standpoint, why should the institutional management permit it to be handled by low-paid and irresponsible employees? There is no department of an institution where high salaries will be so quickly justified as in the preparation and service of food. Institutions that have not adjusted their kitchen and dining-room wages to war conditions, to the end that competent, willing help can be secured and retained, should take this matter under immediate consideration.

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